

The Economist

SEPTEMBER 30TH–OCTOBER 6TH 2017

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intelligence, which presses forward, and
an unworthy, timid ignorance obstructing
our progress."

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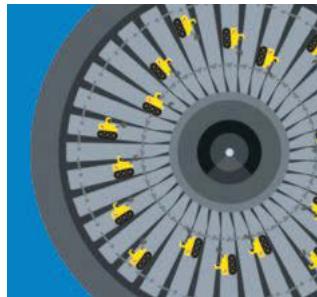
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Principal commercial offices:

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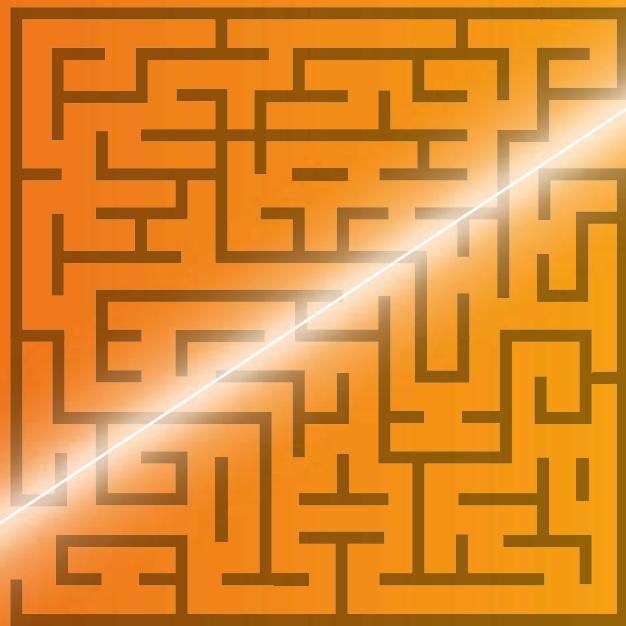


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FLYING HIGH

How the aerospace industry is soaring in Malaysia

Across the globe, rising wealth and the advent of discount airlines have made air travel more of a mass proposition than ever before. At the same time, the boom in electronic and mobile commerce has increased air-freight volumes as consumers order goods across borders, demanding speedy delivery.

This has proven a boon for the aerospace industry. Globally, in the next two decades, more than 41,000 aircraft are expected to be produced, with a value of over \$6.1 trillion. This bounty will flow not only to plane manufacturers but also to a range of supporting parts and service suppliers.

By implementing its Aerospace Industry Blueprint 2030, Malaysia is committed to growing the local industry, which recorded total revenue of \$2.9 billion in 2016 as exports increased by 3.2% to \$1.3 billion. Due to Malaysia's conducive business environment, the more than 80 aerospace companies operating there include international players such as GE Engine Services Malaysia, Airbus and Spirit AeroSystems, along with local firms like SME Aerospace, CTRM Aero Composites and UMW Aerospace.

"The government worked hand in hand with the industry and provided a platform by making available resources in engineering, skilled technicians and programmes to establish new suppliers," says Scott McLarty, vice-president of Spirit AeroSystems Malaysia.

Kansas-based Spirit AeroSystems is one of the world's largest manufacturers of aerostructures. Since setting up in Malaysia, it has developed a talent pipeline to help meet increasing demand for highly skilled aerospace workers. It expects staff numbers to grow to 1,000 within the next three years, and has

"Aerospace helps transition UMW Group into high-value manufacturing," says Megat Shahrul Azmir, president of UMW's manufacturing and engineering division. "We [now] have a very niche capability which allows us to diversify into other industries."

created 2,700 more jobs at local suppliers of fabrication, tooling and jigs, machining, logistics and consumables.

The strength of this supply chain is a huge draw for foreign aerospace companies. "Malaysia established a strong foundation to promote the aerospace industry's growth with incentives and schemes," says Scott McLarty, vice-president of Spirit AeroSystems Malaysia. "The government worked hand in hand with the industry and provided a platform by making available resources in engineering, skilled technicians and programmes to establish new suppliers."

One of the many local companies to benefit from the presence of large global firms is UMW Aerospace. Being the first Asian business to manufacture fan cases for Rolls Royce is helping it develop capability in precision hard metal machining. "Aerospace helps transition UMW Group into high-value manufacturing," says Megat Shahrul Azmir, president of UMW's manufacturing and engineering division. "We [now] have a very niche capability which allows us to diversify into other industries."

The world's new and emerging leaders in the aerospace industry are already making Malaysia their hub from which to embrace the abundant business opportunities in Asia today. To find out more about how you can join them, contact MIDA, the Malaysian Investment Development Authority: www.mida.gov.my

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MALAYSIAN INVESTMENT DEVELOPMENT AUTHORITY

Politics



Saudi Arabia announced that it would allow women to drive. The kingdom's influential Islamic clerics had long insisted that the ban on female drivers was needed to stop wives from committing adultery. This infuriated Saudi women, some of whom would like to drive to work. Muhammad bin Salman, the powerful crown prince, sided with the women. But they still need a male guardian's permission to travel or marry.

The **Kurdish** region of northern Iraq voted to secede from Iraq in a non-binding referendum. The Iraqi prime minister had called for the vote to be cancelled. Western governments were divided, but Kurdish leaders said it gives them a mandate to start negotiations with Baghdad.

The re-run of **Kenya's** annulled presidential election was pushed back by nine days, to October 26th, after the election commission said it needed more time to ensure the ballot runs smoothly.

Third time lucky?

The Trump administration issued a new **travel ban**, its third attempt at a policy that has fallen foul of the courts. This time the ban applies to people from Chad, Iran, Libya, North Korea, Somalia, Syria and Yemen with more limited restrictions on Iraq and Venezuela. In light of the new ban, the Supreme Court scrapped a hearing on the old one.

The governor of **Puerto Rico** called on the federal government to step up its relief efforts, a week after Hurricane Maria

tore through the American territory. Power is still patchy on the island, food shortages have been reported and many towns remain cut off.

The Republican primary for a Senate seat in **Alabama** was won by Roy Moore, a former judge who was sacked twice for ostentatiously disobeying laws he did not like. It was a victory for the anti-establishment wing of the party; Mr Moore was supported by Stephen Bannon, Donald Trump's defenestrated chief strategist. Mr Trump stumped for Mr Moore's opponent, Luther Strange, though his endorsement was lukewarm.

The Republican leadership in the Senate ditched its latest, and possibly final, push to overturn **Obamacare**, after John McCain, a Republican from Arizona, joined at least two other steadfast opponents of repeal from his own party.

Riding to a fourth term



Angela Merkel won Germany's general election, but her CDU/CSU alliance lost dozens of seats. The Social Democrats, with which the CDU has been in coalition for the past four years, were also hammered, and announced that they would not enter a second "grand coalition" with Mrs Merkel. Alternative for Germany, an anti-immigration party founded in 2013, got 12.6% of the vote, winning its first seats in the Bundestag.

Wolfgang Schäuble decided to step down as **Germany's** finance minister. An ardent pro-European, he was also arguably the most strident voice pushing for austerity measures during the euro zone's debt crisis.

In Paris President **Emmanuel Macron** made a lengthy speech calling for an ambitious new programme of European integration that he said would take until 2024 to complete. It calls for a European intelligence service, a euro-zone finance minister, a common defence budget and much else.

Ireland is to hold a referendum next year on changing the laws on abortion, allowing it if the mother's life is in danger.

The Spanish region of **Catalonia** prepared to vote in an unconstitutional referendum on independence. The national government has done all it can to prevent the poll, seizing ballot boxes and voting slips, and threatening officials with large fines if they co-operate.

Theresa May gave a speech proposing a "period of implementation" for **Britain's** departure from the EU. Although officially constrained by the exit date of March 29th 2019, the British prime minister was widely seen to be softening her government's stance and open to compromise. The European Council welcomed the speech; its president, Donald Tusk, was cautiously optimistic.

Always a gamble

Shinzo Abe, **Japan's** prime minister, called a snap election. He said he was seeking voters' approval of his spending plans and his hawkish policy on North Korea. A new group, the Party of Hope, could give him a real contest.

The Communist Party chief of **Beijing** called for a crackdown on "unstable elements" in the city in preparation for a five-yearly party congress next month. He said this should include efforts to stop "various political rumours and harmful information". In a possibly related development, WhatsApp, a messaging service, has been disrupted in China.

The incumbent Nationals won 58 seats in **New Zealand's** election, falling three seats short of an overall majority.

Their main rivals, Labour, won 45, but could still form a coalition government. The populists of New Zealand First hold the balance of power.

Tensions between **North Korea** and America continued to escalate. America sent warplanes along the edge of the North's airspace. It responded by comparing the show of force to a declaration of war and threatened to shoot down American bombers.

Close-quarter combat



Brazil's president, Michel Temer, sent 950 soldiers into the Rocinha favela in Rio de Janeiro to quell days of gun violence between rival drug gangs. Schools and health clinics have been closed since dozens of gang members invaded the city's biggest slum in an attempt to grab territory.

A judge in **El Salvador** acquitted eight police officers accused of murdering a man in the San Blas Massacre, in which six alleged gang members and two civilians were killed by police in 2015. The judge ruled that the man's death was a "summary, illegal or arbitrary execution", but that it was impossible to determine which officer fired the bullet. Prosecutors made no mention of the seven other people killed that night.

The **UN** finished deactivating 8,994 firearms and 35 tonnes of explosives collected from FARC rebels in **Colombia**. Fifteen specialists spent six weeks cutting through the metal weapons, which will be turned into monuments and placed in Colombia, the UN's headquarters in New York, and Cuba, which hosted the peace negotiations.

Business

Transport for London, a local-government body, announced that it would not renew **Uber's** licence to operate in the city, in which it has 3.5m users. The decision was based on "issues which have potential public-safety and security implications", which Uber will appeal against. The firm is familiar with regulatory run-ins; it backed out of Denmark and Finland earlier this year and this week threatened to pull out of Quebec rather than adhere to new rules. It is also partially banned in Australia and has fallen foul of state authorities in its native America, where it is under a criminal investigation for evading local enforcement.

A bombshell for Bombardier

Britain and Canada criticised America's decision to slap punitive tariffs on aircraft made by **Bombardier**. In a preliminary ruling, the US Department of Commerce threw its support behind Boeing's claim that Bombardier's C series of small passenger jets had benefited from state aid in Canada, the firm's home country, and the United Kingdom, where the wings are assembled in Belfast. Both governments have hinted at retaliating by buying fewer military jets from Boeing.

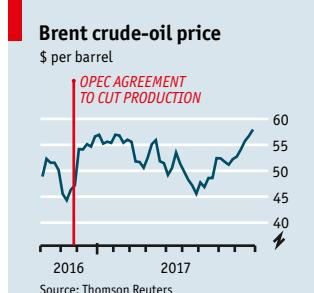
Two of Europe's engineering powerhouses decided to merge their trainmaking operations. **Alstom**, which is based in France, and **Siemens** of Germany hope the deal will put them on track to fight growing competition from state-backed Chinese firms. The merger is backed by the French and German governments, but could be derailed by nationalist sentiment in France.

Dyson, a British maker of vacuum cleaners, announced that it was developing an electric car. Signifying that the **electric-power** revolution is not confined to the car industry, easyJet said it hoped to fly short-haul planes powered

by batteries within the next two decades. The European airline is working with Wright Electric, an American startup.

The latest in a flutter of deals in the mobile-payments industry saw a private-equity consortium offer \$5.3bn for **Nets**, a Danish payments-processor that operates throughout the Nordic region. The acquisition is one of the largest private-equity buy-outs in Europe in recent years.

Rebalancing act



Oil prices climbed, in part because of Turkey's threat to shut the pipeline that carries oil from Iraqi Kurdistan to the Turkish port of Ceyhan. Brent crude reached \$58.50 a barrel, the highest since July 2015. With prices rising steadily, some think the market may at last be readjusting to the OPEC-led drive to reduce supply in order to ease a global oil glut.

Jay Clayton, the chairman of the **Securities and Exchange Commission**, was grilled by Congress over the recent revelation that the electronic system used by companies to compile information for regulators had been hacked in 2016. Although the breach happened under Mr Clayton's predecessor, congressmen wanted to know why it had taken so long to come to light.

Moody's downgraded **Britain's** credit rating, saying it expects the burden of public debt to rise, and that "fiscal pressures will be exacerbated" if the country endures a messy divorce from the EU. The Treasury hit back, describing the analysis as "outdated". However, Moody's also changed its outlook for Britain back to "stable" from the "negative" assessment it issued after the Brexit referendum last year.

Google adjusted its shopping-services business in Europe so that rivals have a better chance of having their ads displayed prominently on its website. Google made the change to meet an EU deadline. Otherwise it would have had to pay up to 5% of its revenue each day for not complying with this summer's record antitrust ruling.

Facebook bowed to pressure from shareholders and abandoned a plan to reclassify its shares. Mark Zuckerberg had hoped to sell a tranche in order to fund his charity and at the same time retain a majority voting stake. He now plans to sell up to 75m shares, worth around \$12bn, and still keep control of the company.

Let the games begin

The Republicans released their long-awaited **tax-slashing plan**. It proposes cutting corporate tax from 35% to 20% and reduces the income-tax brackets from seven bands to three. The actual bill that will emerge from Congress is anybody's guess.

Hugh Hefner died, aged 91. Though often derided, his **Playboy** magazine published stories by many famous authors, including Margaret Atwood, James Baldwin and Joyce Carol Oates, as well as in-depth interviews, including with Martin Luther King. Its peak circulation reached 7m. Female centrefolds are its mainstay. Mr Hefner once said that "Sex is the driving force on the planet. We should embrace it, not see it as the enemy."

Other economic data and news can be found on pages 80-81





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DEMATIC

Europe's new order

A dynamic Emmanuel Macron and a diminished Angela Merkel point to a new balance in Europe



Le Pen might become the Gallic Donald Trump.

This week, it all looks very different. Mrs Merkel won her election on September 24th, but with such a reduced tally of votes and seats that she is a diminished figure (see page 47). Germany faces months of tricky three-way coalition talks. Some 6m voters backed a xenophobic right-wing party, many of them in protest at Mrs Merkel's refugee policies. Having had no seats, Alternative for Germany, a disruptive and polarising force, is now the Bundestag's third largest party.

Yet west of the Rhine, with a parliament dominated by his own new-minted and devoted party, France's President Emmanuel Macron is bursting with ambition (see our special report in this issue). This week he used a speech about the European Union to stake his claim to the limelight. Whether Mr Macron can restore France to centre-stage in the EU after a decade in the chorus depends not just on his plans for Europe, but also on his success at home, reforming a country long seen as unreformable.

Angela's leading man

Start with Europe. This week's speech was brimming over with ideas, including a shared military budget and an agency for "radical innovation", as well as the desire to strengthen the euro zone. At one level, Mr Macron's bid for the role of intellectual innovator in Europe fits a long French tradition. Moreover, elements of his speech—a new carbon-tax on the EU's frontiers, a proposal to tax foreign tech firms where they make money rather than where they are registered, a crusade against "social dumping" with harmonised corporate tax rates—were in keeping with long-standing French attempts to stop member states competing "disloyally" against each other.

Yet Mr Macron has a more subtle and radical goal than old-style *dirigisme*; as if to prove it, he agreed this week that Alstom, which makes high-speed trains, could drift from state influence by merging with its private-sector German rival. His aim is to see off populism by striking a balance between providing job security for citizens, on the one hand, and encouraging them to embrace innovation, which many fear will cost them their jobs, on the other (see Charlemagne). In his speech Mr Macron also made the case for digital disruption and the completion of the digital single market. Euro-zone reform would make Europe less vulnerable to the next financial crisis.

The merit of these ideas depends on whether they lead to a more enterprising, open and confident Europe or to a protectionist fortress. But they may not be tried out at all unless Mr Macron can make a success of his policies at home. For, if France remains a threat to the EU's economic stability rather than a source of its strength, its president can never be more

than a bit player next to Germany's chancellor.

Mr Macron's domestic policy might seem to have made a poor start. He has grabbed headlines thanks to the size of his make-up bill, the collapse of his popularity and the whiff of arrogance about his "Jupiterian" approach to power. Predictably, the grouchy French are already contesting the legitimacy of the plans they elected Mr Macron to carry out. Reform in France, it seems, follows a pattern. The street objects; the government backs down; *immobilisme* sets in.

Yet take a closer look, and Mr Macron may be about to break the pattern. Something extraordinary, if little-noticed, took place this summer. While most of the French were on the beach, Mr Macron negotiated and agreed with unions a far-reaching, liberalising labour reform which he signed into law on September 22nd—all with minimal fuss. Neither France's militant unions, nor its fiery far left, have so far drawn the mass support they had hoped for onto the streets. Fully 59% of the French say that they back labour reform. More protests will follow. Harder battles, over pensions, taxation, public spending and education, lie ahead. Mr Macron needs to keep his nerve, but, astonishingly, he has already passed his first big test.

In many ways, the 39-year-old Mr Macron is not yet well understood. Behind the haughty exterior, a leader is emerging who seems to be at once brave, disciplined and thoughtful. Brave, because labour reforms, as Germany and Spain know, take time to translate into job creation, and usually hand political rewards to the successors of those who do the thankless work of getting them through. Disciplined, because he laid out clearly before his election what he planned to do, and has stuck to his word. The unions were fully consulted, and two of the three biggest accepted the reform. Compare that with his predecessor, François Hollande, who tried reform by stealth and encountered only accusations of bad faith. Last, thoughtful: Mr Macron does not approach policy as an *à la carte* menu. He has grasped how digital technology is dislocating the world of work. His governing philosophy is to adapt France's outdated system of rules and protections accordingly.

Drumroll

Over the past few years, an enfeebled France has been a chronically weak partner for Germany, pushing Mrs Merkel into a solo role that she neither sought nor relished. If he is to change that dynamic, Mr Macron needs to move swiftly to match his labour law with an overhaul of France's inefficient training budget, increase the number of apprenticeships and renovate the state's sleepy employment services. He also needs to explain with a less contemptuous tone why his plans for tax cuts, including to France's wealth tax and corporate tax, are not designed simply to benefit business and the better-off. In Europe he needs to reassure the northern, more open economies that he is not trying to put up walls.

Of course, Mr Macron's first steps in the spotlight may falter. The odds on any leader reforming France are never high. He will struggle to convince Germany to embrace his vision of euro-zone reform. But, if this year has shown anything, it is that it is a mistake to bet against the formidable Mr Macron. ■

Opening up Saudi Arabia

Driving reform

At last Saudi women will be allowed to drive. Next, abolish male guardianship



CLERICS in Saudi Arabia, the birthplace of Islam, have long struggled to justify the kingdom's decades-old ban on women driving. Often they resorted to strange excuses. Some said women were too stupid to drive. Some worried that male drivers might be dangerously distracted by female ones, or that mobility would make it easier for wives to commit adultery. One suggested that driving damages the ovaries. None was able to cite a verse in the Koran to justify barring women from the wheel, because there isn't one. On the contrary, reformers note, in the early days of the faith women rode donkeys, unsupervised, without bringing death and destruction.

So the kingdom's decision on September 26th to lift the ban is as welcome as it is overdue. It will give Saudi women a freedom that others take for granted. It will have economic benefits, too, sparing families the cost of hiring a (male) driver and making it easier for women to get out of the house and into the labour market. It makes Saudi Arabia a bit less dismally exceptional; no other country bans women drivers, unless you count the non-country, Islamic State. Yet it is only a start.

The kingdom has long been ruled by a pact between the Al Saud ruling family and Wahhabi clerics who impose their ultra-strict interpretation of Islamic law. In part its puritanism was a response to a double shock in 1979, the Islamic revolution in mainly Shia Iran and the siege of the Great Mosque in Mecca by Sunni extremists. In private, Saudi royals often espouse more liberal views, but they have always feared upsetting their alliance with the clerics.

The crown prince, Muhammad bin Salman (or MBS, as he is called), is a bolder sort of royal. His father, King Salman, has given him control over most things, including the economy

and defence policy. MBS, in turn, has drawn up an ambitious reform programme to diversify the country away from oil and wean Saudis off do-little government jobs by energising the private sector. Tapping the kingdom's greatest underused resource—its women—is an obvious place to begin. More women attend Saudi universities than men, but they make up just 15% of the workforce. Come June, when the ban is officially lifted, they will be able to drive themselves to work.

MBS has chipped away at the *wilaya* (guardianship) system, which puts women under the thumb of male relatives, and curbed the religious police, who used to hound young Saudis for such offences as wearing nail polish. Public concerts, previously banned, started this year. There is even talk of opening cinemas for the first time since the 1980s. Saudis are among the most digitally connected people in the world. MBS is right to sense that they want more freedom. His next steps should be to abolish the *wilaya* system entirely and curb the influence that Wahhabi clerics exercise over Saudi schools and social policy. Wahhabism, after all, is one of the ideological pillars of global jihadism.

The headstrong prince

The flipside of MBS's boldness is his propensity to act rashly. He has pursued a cruel war in Yemen and led a diplomatic assault on Qatar, with little to show for either. The lifting of the ban on women drivers seems timed to distract attention from the recent suppression of dissent at home. The dissidents his regime has locked up include reformers and even clerics who argued for lifting the driving ban. Social liberalisation is being pursued by illiberal means, and incoherently. It is hard to envisage MBS succeeding in his ambitious plans by royal decree. He needs to garner more consent. To obtain it, he must learn to tolerate debate and disagreement. Eventually he should move towards some form of democratic consultation. ■

A snap election in Japan

Abe's road

A vital part of Japan's national security is its economy



JAPAN'S economy has been so sickly for so long that many have stopped looking for signs of recovery. And yet, on close examination, they are there. Years of massive fiscal and monetary stimulus seem to be having some effect. Unemployment is below 3%—the lowest rate in 23 years—and wages are rising, at least for casual workers. Prices are creeping up, too, albeit by much less than the Bank of Japan's 2% inflation target. To outsiders, this may sound underwhelming. But for a country that has suffered from almost 30 years of on-and-off recession and

deflation, it holds out the prospect of deliverance. The past 18 months of modest expansion constitute the longest stretch of uninterrupted growth in more than ten years.

The architect of this semi-revival, Shinzo Abe, has been prime minister for nearly five years—close to the record for the era since Japan's massive asset-price bubble burst in 1990. This week he called a snap election, with the vote set for October 22nd. The result is not really in doubt: it would be an astonishing reversal if Mr Abe's Liberal Democratic Party (LDP), which currently holds a two-thirds majority with its ally, Komeito, did not lead the next government. But a series of scandals have sapped Mr Abe's authority, and he may face more competition than he was bargaining for. Politics could yet derail the tenta- ►

tive recovery, leaving the world's third-biggest economy in the mire once more.

Throughout his tenure, Mr Abe has procrastinated over critical but unpopular reforms intended to keep the economy upright when the fiscal and monetary support is eventually withdrawn. He still promises to curb the unsustainable pension system, to open sheltered industries to competition, to make it easier to dismiss salaried employees, and so on. And there have been plausible reasons for delay. Both politically and economically, it made sense to wait until a recovery was under way before administering unpleasant medicine.

Abe's bad habits

But politics now appears to be compounding Mr Abe's timidity. He called the election more than a year ahead of schedule, presumably on the assumption that his prospects were not likely to improve over the next 14 months. One concern is the formation of the Party of Hope, led by the governor of Tokyo and recent defector from the LDP, Yuriko Koike. The new party will subsume the Tokyo-based one she led to a resounding victory over the LDP in local elections earlier this year. It is in effect absorbing the party that currently serves as the main opposition, the Democrats, thereby uniting Mr Abe's chief adversaries (see page 25).

As it was, Mr Abe hardly seemed to be preparing voters for unpopular economic reforms. He has been talking about the economy on the stump, but only to promise extra spending on

various things, including pensions. He readily admits that he is more interested in amending the pacifist constitution than in mending the economy, and that structural reform is simply a means to restore Japan to greatness.

The election may make things worse, if it ends up sapping Mr Abe's authority, and with it his enthusiasm for reform. At the very least, the LDP seems likely to lose a few seats, simply because its current majority is so big. If the losses are bigger than expected, ambitious underlings in the LDP may try to eject Mr Abe as leader of the party.

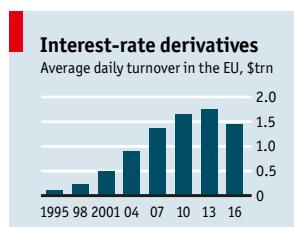
But however big the LDP's majority, and whoever ends up in charge, it would be a grave mistake to leave the job of reviving the economy half done. Fixing things will only get harder as time passes. As it is, public debt is over 250% of GDP. The population is ageing and the workforce shrinking—drags on growth that will grow ever heavier.

North Korea's warmongering may have shifted some voters' attention from the economy to national security. This plays to Mr Abe's strengths: in dealing with Kim Jong Un, Japan needs a forceful leader who works well with its difficult ally, Donald Trump's America. However, in the long run, a failure to avert economic decline will pose as great a threat to Japan's security. The economic malaise has lasted for so long that many voters and politicians may think they can live with it. But big budget deficits and loose monetary policy can only paper over the problem. In the meantime, the opportunity to fix things without great upheaval is slipping away. ■

Financial regulation

Day of the MiFID—the sequel

Europe's massive new law has laudable aims but implementation is proving a nightmare



LIKE the clubs it sometimes resembles, the financial industry tends to discriminate against non-members—such as bank depositors, retail investors and small firms. The most pervasive form of discrimination is opacity: it is nearly impossible, say, for an average investor to know how much of the money in his pension pot is lost in transaction costs. As well as helping institutions milk their clients, opaque markets can cause or exacerbate crises when investors flee risks they cannot assess; witness the fate of mortgage-backed securities in 2007-08. So it is welcome that much post-crisis financial regulation aims to make markets more transparent. That was true both of the Dodd-Frank reforms in America and a huge new law in the European Union. As with Dodd-Frank, however, the benefits of Europe's reform risk being drowned in its complexity.

The Markets in Financial Instruments Directive (MiFID 2), which comes into force in January, is a child of the crisis, and is at least as broad and ambitious as Dodd-Frank. It recasts a law from 2007 governing share trading and is the latest stage in the EU's long project to harmonise financial markets within its borders—this time covering bonds, derivatives and other instruments as well as equities.

Trading in bonds and derivatives is at present largely conducted "over the counter" (off centralised exchanges). The new

law pushes it towards electronic-trading venues, and requires much greater price transparency. In the same vein, it restricts trading of shares in "dark pools" (private exchanges closed to the retail investor). The result should be that middlemen pass more of the benefits to their customers. Similarly, investment banks will be required to "unbundle" the cost of their research notes. Fund managers will have to pay for them separately, rather than bury them in other commissions and fees.

Laudable as the law's aims are, its implementation is proving a nightmare as the deadline draws near (see page 65). The financial industry, for all its predictable grumbling, has partly itself to blame for leaving preparations too late. But regulators are at fault, too. Some EU countries have not yet finalised their interpretation of the rules (despite Britain's impending Brexit, its regulator is in fact the best prepared). The precise scope of a new regime for firms trading on their own account, central to the law's operation, was not nailed down until August.

Liberty, fraternity and equivalence

Most worrying are the looming cross-border clashes. The EU's rules conflict with American ones that forbid charging institutional investors for research and on investor protection for some derivative transactions. Some measures may do more harm at home than abroad. The law requires EU regulators to declare foreign trading venues "equivalent" for Europeans to continue to trade there. No such declaration has yet been made for America. That may be because any decision made on ►

► “equivalence” now might set a precedent for discussions with Britain as it leaves the EU. Even a temporary loss of access for Europeans to the most liquid markets—shares listed on the NASDAQ exchange, say, or futures traded on the Chicago Mercantile Exchange—could do them serious damage.

Like Dodd-Frank, MiFID 2 is a sprawling law that attempts to be an all-purpose instruction manual covering every eventuality. This distracts from the truly important goals and makes unintended consequences more likely. Its predecessor, MiFID 1, for instance, succeeded in its aim of breaking the monopoly of national stock exchanges by encouraging the formation of new trading venues for shares. But that fostered the growth of dark pools. Now, the hassle and expense of compliance required by MiFID 2 may prompt consolidation in trading venues, reversing some of those gains. And, unless EU regulators resolve their clashes with their American counterparts, some

parts of financial markets risk balkanisation.

In an ideal world, MiFID 2 would have been simpler, leaving more room for regulatory discretion. Cross-border problems could have been avoided through greater international co-operation earlier on. But now that the law is just around the corner, options are limited. Its introduction was already delayed for a year; a further delay would reopen a can of worms.

Better to introduce the law now, but show regulatory flexibility, allowing a transition period in which investors still have access to American exchanges even if formal “equivalence” is not finalised. And MiFID 2 comes up for its review in 2020. At that point, the European Commission should be ruthless in scrapping or changing bits that are not working as planned. Financial firms, for their part, need to move beyond grumbling. The new law is not just a burden, but an opportunity. It heralds the most transparent markets Europe has ever known. ■

Property in the digital age

Take back control

Digital devices are challenging the nature of ownership. It's time to fight back



OWNERSHIP used to be about as straightforward as writing a cheque. If you bought something, you owned it. If it broke, you fixed it. If you no longer wanted it, you sold it or chucked it away. Some firms found tricks to muscle in on the aftermarket, using warranties, authorised repair shops, and strategies such as selling cheap printers and expensive ink. But these ways of squeezing out more profit did not challenge the nature of what it means to be an owner.

In the digital age ownership has become more slippery. Just ask Tesla drivers, who have learned that Elon Musk forbids them from using their electric vehicles to work for ride-hailing firms, such as Uber. Or owners of John Deere tractors, who are “recommended” not to tinker with the software that controls them (see page 57). Since the advent of smartphones, consumers have been forced to accept that they do not control the software in their devices; they are only licensed to use it. But as a digital leash is wrapped ever more tightly around more devices, such as cars, thermostats and even sex toys, who owns and who controls which objects is becoming a problem. Buyers should be aware that some of their most basic property rights are under threat.

Lost property

The trend is not always malign. Manufacturers seeking to restrict what owners do with increasingly complex technology have good reasons to protect their copyright, ensure that their machines do not malfunction, uphold environmental standards and prevent hacking. Sometimes companies use their control over a product’s software for the owners’ benefit. When Hurricane Irma hit Florida this month, Tesla remotely upgraded the software controlling the batteries of some models to give owners more range to escape the storm.

But the more digital strings are attached to goods, the more the balance of control tilts towards producers and away from

owners. That can be inconvenient. Picking a car is hard enough, but harder still if you have to unearth the specs that tell you how use is limited and what data you must surrender. If it leads to more built-in obsolescence, it can also be expensive. Already, items from smartphones to washing machines have become exceedingly hard to fix, meaning that they are thrown away instead of being repaired.

Privacy is also at risk. Users were appalled when it emerged that iRobot, a robotic vacuum cleaner, not only cleans the floor but creates a digital map of the home’s interior that can then be sold on to advertisers. Standard Innovation, a maker of a connected vibrator called We-Vibe, was recently ordered to pay customers \$10,000 each after hackers discovered that the device was recording highly personal information about its owners. And farmers complain that, if crisis strikes at the wrong time, John Deere’s requirement that they use only authorised software, which funnels them to repair shops that may be miles away, can be commercially devastating. Some are sidestepping the curbs with hacked software from eastern Europe.

Such intrusions should remind people how jealously they ought to protect their property rights. They should fight for the right to tinker with their own property, modify it if they wish and control who uses the data that it hoovers up. In America this idea has already taken root in the “right to repair” movement; legislatures in a dozen states are considering enshrining this in law. The European Parliament wants manufacturers to make goods, such as washing machines, more fixable. In France appliance-makers must tell buyers how long a device is likely to last—a sign of how repairable it is. Regulators should foster competition by, for instance, insisting that independent repair shops have the same access to product information, spare parts and repair tools as manufacturer-owned ones—rules that are already standard in the car industry.

Ownership is not about to go away, but its meaning is changing. This requires careful scrutiny. Gadgets, by and large, are sold on the basis that they empower people to do what they want. To the extent they are controlled by somebody else, that freedom is compromised. ■



VALUES WORTH SHARING

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with the best.
That's why we
bought our first
Rubens in 1643."**

H.S.H. Prince Philipp von und zu Liechtenstein,
LGT Chairman since 1990



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Private
Banking

Novel intelligence

I enjoyed Bagehot's column, "Spies like us" (September 9th). He is right. The relationship between SIS/MI6 and the literary establishment has historically been close, if turbulent. We have attracted some great writers; some have become famous, many more have set aside their vocation and remained in the service. Some of the operational correspondence I have seen during my career would grace many an anthology were it not for its classification.

Despite inevitable tensions between the secret and published world, the relationship has generally been of mutual benefit. Literature gains an edgy genre. We are painted in the minds of a global audience as some form of ubiquitous intelligence presence. This can be quite a force multiplier, even if it means we are blamed for an astonishing range of phenomena in which we have no involvement at all.

I leave your readers to judge whether or not a country's spy fiction provides an accurate guide to the country itself. But it is certainly true that a country's intelligence service can offer an unvarnished reflection of the values of the country it serves. The Stasi told you all you needed to know about the East German regime. SIS, and our sister services, GCHQ and MI5, tell you a lot about modern Britain. My staff are representative of the British public, firmly rooted in the values of our liberal democracy, doing some extraordinary and highly effective work in the face of a set of forbidding modern threats. Our fictional portrayal, by contrast, can be pretty wild, and often downright cynical. We are humans and we make mistakes, but I work on the principle that the more the public knew of what we did, the prouder they would be.

Which brings me to Bagehot's contention that British spies are the "mavericks" of government. Not really. We do things in defence of national security that would not be justified in pursuit of private interest. But only when they

are judged by ministers to be necessary and proportionate. We break the rules, certainly; we do not break the law. And if we are not maverick, we are not all establishment or male either; ask my deputy. What I will allow, is that alongside our values of courage, respect and integrity, we place a premium on creativity. Although we are growing, we will always be of limited size compared with our adversaries. We will never prevail through scale or force of numbers. It is creativity, innovation and sheer guile that give us the edge.

It seems that we are destined always to have an ambivalent relationship with our public alter ego, MI6. But I have learnt to live with it. Indeed, I have determined to take advantage of it. They say that life follows art. I do not think that this is the case exactly. But I accept that there is a strong feedback loop. In which case, I should make it clear that, despite bridling at the implication of a moral equivalence between us and our opponents that runs through John le Carré's novels, I'll take the quiet courage and integrity of George Smiley over the brash antics of 007, any day.

ALEX YOUNGER ("C")
Chief of the Secret
Intelligence Service
London

Can we talk?



Against the backdrop of terrifying options on North Korea's nuclear threat ("Messaging the shooter", September 9th), it is surprising that you did not mention the newly adopted Treaty on the Prohibition of Nuclear Weapons, signed at the UN by non-nuclear coun-

tries. This pact is the first international agreement to prohibit nuclear weapons comprehensively. You say that "North Korea is unlikely to give ground", but when the UN first resolved in October 2016 to negotiate this treaty, North Korea voted in favour. As it was the only nuclear state to do so, it later reversed its position.

Why not report on this accord? Or do you trust a select group of rotating leaders (especially the present ones, in all their bluster) to employ deterrence, safely and successfully, in perpetuity?

SETH SHELDEN
New York

In defence of Hillary

Hillary Clinton may not have delivered a compelling economic vision during last year's campaign (Lexington, September 16th). But she did explain her policies and positions in numerous thoughtful policy papers and speeches. Bernie Sanders and Donald Trump lacked a basic knowledge of their economic positions, as was evident in every debate. Perhaps Mrs Clinton's shortcoming was in not employing their populist rhetoric to "build the wall", "crack down on Wall Street", "drain the swamp" and "provide free health care and education for all". Her failure to win says more about modern political culture than it does about her campaign.

SAM LIPSCOMB
Gambier, Ohio

Competition policy in the EU

Your article on Margrethe Vestager, the EU's competition commissioner, misrepresents the issue with sweetheart-tax deals ("Big Tech's nemesis", September 16th). The control of government subsidies is not about competition between firms: it is about competition between governments to attract inward investment. You say that "it is a stretch to use state-aid rules to achieve the sort of tax harmonisation that is favoured in Brussels". But ambitious use of antitrust

powers has long been the tool of choice for breaking legislative logjams. That was how telecoms and energy liberalisation kicked off, and how EU policy on mergers came to be.

At least your criticisms of the commission's process as "prosecutor, judge and executioner" resonate with me. But you give no weight to the safeguards that have been grafted onto the system, implying that the commissioner rules by whim. Not so.

Competition law is an important area of power for the commission, and holders of Ms Vestager's office have always been in the spotlight. It is not a failing on her part that she is an effective communicator. It does not justify your *ad feminam* headline that she is championing her own political career rather than looking out for consumers.

ALEC BURNSIDE
Partner
Dechert
Brussels

Breezy rhetoric

You stated that Britain remains the world leader in offshore-wind power ("Hull of a wind behind it", September 16th). That would be contested by the Danes and the Germans who supply Britain with the turbines, the Italians who make the cables, the French who provide everything but the turbines, and the Dutch who install them. The subsidy, however, is 100% British.

A.J. MACKINNON
Ely, Cambridgeshire

Read all about it!

Regarding Johnson's musing on tabloid headlines (August 26th), my personal favourite is "Hide and seek champ found dead in cupboard".

BOB LACEY
Eastbourne, East Sussex ■

Letters are welcome and should be addressed to the Editor at The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT
E-mail: letters@economist.com
More letters are available at: Economist.com/letters

Executive Focus



Norwegian is the world's sixth largest low-cost carrier with over 500 routes to more than 150 destinations in Europe, North Africa, the Middle East, Thailand, the Caribbean and the US. The company, headquartered in Norway, was listed on the Oslo Stock Exchange in 2003. The Norwegian Group has organized its operations and different functions into several entities to ensure competitiveness, global growth and access to markets. Norwegian's rapidly growing fleet consists of almost 150 aircrafts, one of the youngest fleets worldwide, and the company still has 250 aircrafts on order. Norwegian has been voted the "World's best low-cost long-haul carrier for the third year 'Europe's best low-cost carrier' by passengers for the fifth consecutive years at SkyTrax World Airline Awards.

norwegian



CFO

As a key member of the Executive Management team, the Chief Financial Officer (CFO) will report to the CEO and assume a strategic role in the overall management and growth of the company.

For further information, contact our advisor Heidi Wiggen by email heidi.wiggen@visindi.no or phone +47 916 56 103, Renate Skilnand at renate.skilnand@visindi.no or phone +47 930 50 038 or Atle Ronglan at atle.ronglan@visindi.no, phone +47 966 27 089. CV and application can be sent through our application form at www.visindi.no/vacancies

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The OPEC Fund for International Development (OFID)

The OPEC Fund for International Development (OFID), based in Vienna – Austria, is the development finance institution established by the Member States of OPEC in 1976 as a collective channel of aid to the developing countries. OFID works in cooperation with developing country partners and the international donor community to stimulate economic growth and alleviate poverty in all disadvantaged regions of the world. To date, OFID has made financial commitments of more than US\$ 21.2 billion to over 3,720 operations across 134 countries worldwide.

In pursuit of its *Organizational Strengthening Program*, OFID has openings and seeks to fill the following vacancies:

- i. Head, Internal Audit Function – (Open to all nationalities)
- ii. Computer System Officer – SAP Specialist (Preference will be given to OFID Member Countries' Nationals)

OFID offers an internationally competitive remuneration and benefits package, which includes tax-exempt salary, dependent children education grant, relocation grant, home leave allowance, medical and accident insurance schemes, dependency allowance, annual leave, staff retirement benefit, diplomatic immunity and privileges, as applicable.

Interested applicants are invited to visit OFID's website at www.ofid.org for detailed descriptions of duties and required qualifications, as well as procedure for applications for the above mentioned positions and other vacant positions listed on OFID's website.

The deadline for receipt of applications is **October 16, 2017**.

Due to the expected volume of applications, OFID would only enter into further correspondence with short-listed candidates.



Executive Director of the United Nations Human Settlements Programme (UN-Habitat)

The United Nations is seeking a leader of outstanding stature who has the vision and capability to lead UN-Habitat. UN-Habitat supports countries to build a better urban future by promoting socially and environmentally sustainable and inclusive human settlements, and achieving adequate shelter for all.

The Executive Director supports the Secretary-General in advancing the United Nations system reform and leads the necessary institutional and system changes within UN-Habitat to support Member States' efforts to meet the challenges of the 2030 Agenda for Sustainable Development, and the new Urban Agenda.

Applications should include a cover letter and a curriculum vitae, and be sent by email to eosgaplications201710@un.org by **23 October 2017**.

Women candidates are strongly encouraged to apply.

For more information about this position and other UN senior level vacancies, visit: www.un.org/sg/vacancies



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المركز الوطني للدراسات
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Center for Strategic Development

JOB OPENINGS

The Center for Strategic Development (CSD), a newly established think tank in Riyadh, Saudi Arabia, is looking to hire professional economists as per the following opening positions to lead and inspire the economic vision and to support the Saudi Government with the delivery of the Saudi 2030 vision:

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Key responsibilities

- Lead and oversee the research function of the CSD.
- Play a strategic role in CSD's core business and direct the research agenda.
- Manage and supervise all levels of the policy/research team.
- **Ideal candidate must have:**
 - Preferably a Ph. D. in economics with 15+ years of professional research experience.
 - Strong record of driving a team of analysts to produce a steady stream of world-class economic policy analysis products.
 - Deep academic and professional expertise in economics and economic policy.
 - Strong managerial and communication skills.
 - Command of Arabic language is a plus.

Head of Behavioral Insight

Key responsibilities

- Use data science and behavioral principles to understand environmental insights, influence change and inform on decision-making.
- Maintain deep familiarity with relevant academic literature and stay up-to-date on new findings and developments in the field.
- Identify opportunities for policy innovation and improvement across CSD's research programs through behavioral research and insight.
- **Ideal candidate must have:**
 - PHD/Masters degree in economics or psychological or behavioral science.
 - Deep understanding of the policymaking context and experience in the application of behavioral principles to contribute to socio-economic policy design and application.
 - 10 years experience in building models to address government policies.

All interested applicants are requested to send their resumes to careers@csd.gov.sa and are also encouraged to visit the career website for more details at the following link: <https://csd.gov.sa/pages/Careers.aspx>

*Please mention in the email subject the position title and the publication as the main job source.

*Additional opening positions are also available at the career website.



Conventional follies

MADISON, WISCONSIN AND PHOENIX, ARIZONA

A never-previously-used constitutional mechanism may soon create great controversy—even, possibly, a crisis

THE I's had been dotted; the T's were crossed. The 55 delegates to America's first and so-far-only constitutional convention had hammered out compromises on the separation of powers, apportionment of seats in the legislature and the future of the slave trade. But on September 15th 1787 George Mason, a plantation owner from Virginia, rose to his feet to object.

Article V of the draft text laid out two paths by which future amendments could be proposed. Congress could either propose them itself, or it could summon a convention of representatives from the states to propose them. Mason warned that if the federal government were to become oppressive, Congress would be unlikely to call a convention to correct matters. To protect the people's freedom, he argued, convening power should instead be vested in the states. Should two-thirds of their legislatures call for a convention, Congress would have to accede to their demand: a convention they should have.

The constitution was signed two days later, with Article V changed as Mason had suggested. Since then 33 amendments have been proposed, with 27 subsequently ratified, a process which requires approval in three-quarters of the states (see chart 1 on next page). Whether the issue was great (abolishing slavery) or small (changing the

date of presidential inaugurations), all 33 of the proposals came from Congress. Mason's mechanism for change driven by state legislatures has never been used. Even politically informed Americans often have no idea it exists.

That could soon change. In recent years the Balanced Budget Amendment Task Force (BBATF)—a shoestring group that received just \$43,000 in donations in 2015—has been campaigning with great success for such an "Article V" convention. There are now 27 states in which the legislatures have passed resolutions calling for a convention that would propose a balanced-budget amendment. The two-thirds-of-the-states threshold for calling a convention is 34. And, as it happens, there are seven states which have not yet called for a convention to propose a balanced-budget amendment, but in which Republicans control both houses of the legislature.

The earliest all seven could plausibly make the call is 2019, because Montana's legislature is not in session again until then. Bill Fruth, a co-founder of the BBATF, says that by that point he hopes to have the other six in the bag. If he does, then a convention would be on the cards. If his efforts falter, a bigger push is waiting in the wings. Called the Convention of States (cos), it promises amendments on three topics: a

balanced budget, limiting the federal government's power and establishing term limits for members of Congress. Led by Mark Meckler, a former Tea Party activist, the cos got its first resolution passed in 2014. But it has grown fast. It is far better-funded than the BBATF and claims 2.2m volunteers across the country; its advisers include Jim DeMint and Tom Coburn, two influential former Republican senators. Its resolution has now passed in 12 states.

Mr Meckler, like Mr Fruth, says he aims to have 34 states signed up by the end of 2019. Outside observers take that prediction seriously. Pete Sepp of the National Taxpayers' Union (NTU), which has long advocated a balanced-budget amendment, puts the probability of an Article V convention being called by 2020 at 50-50. So does Jay Riestenberg of Common Cause, an organisation devoted to government reform which fiercely opposes an Article V convention.

Take a bow for the new revolution

The idea has support that extends well beyond those fixated on fiscal probity. Although the most successful Article V campaigners have been conservatives, some on the left like the idea, too. They think the status quo is defective, that constitutional fixes need to be applied and that a convention ostensibly called for the purposes of a balanced-budget amendment might, once in session, be convinced to widen its ambit and consider other amendments too. This prospect—a "runaway" convention—persuades others that Article V is a Pandora's Box which needs to be kept firmly shut. It may not be much longer before it becomes clear which side is right. ➤

The want of any previous Article V convention in the past 228 years is not for lack of trying. No one has a firm count of the number of resolutions that state legislatures have passed calling for one, but it is over 500. In 1963 Arkansas even passed a resolution calling for an Article V convention to put forth an amendment removing Mason's convention procedure from Article V. Today, 42 states have at least one Article V application pending.

Given that Article V says Congress must call a convention once two-thirds of the states have asked for one, why has it not? One answer is that no one with standing has gone to court and asked it to. Another may well be that, without conscious deliberation on the subject, Congress has decided that it needs 34 applications not just for any old convention, but for a specific convention: applications that share a topic, wording and the like. This is what the BBATF and cos are trying to provide.

They are not the first to make such a push. In the 1970s the NTU began a campaign to pass state resolutions for a convention on a balanced-budget amendment. By 1983 the project was on the brink of success; 32 state legislatures, some of them Democratic, had signed up, and California and Montana were set to hold ballot initiatives that would have forced their legislatures to add to those applications. But state courts ruled the two ballot initiatives unconstitutional, and the effort stalled (see chart 2).

With the amenders' momentum sapped, their opponents gained the upper hand. Somewhat surprisingly, the most effective response came from the right. The John Birch Society, a far-right fringe group, launched a counter-campaign; the Eagle Forum, a conservative group best known for its fight against an amendment guaranteeing women equal rights to men, led a similar charge. By the late years of Bill Clinton's presidency the budget was in surplus, taking further wind out of the movement's sails. Many states which had passed resolutions rescinded them.

But under George W. Bush the deficit returned, and in 2009 the financial crisis drove it up to levels not seen since the sec-

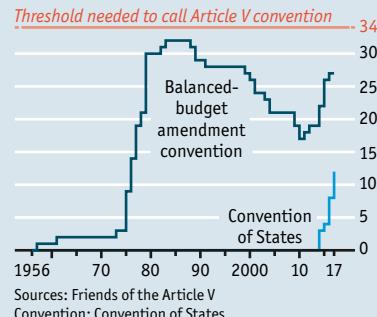
ond world war. "When I saw [the Federal Reserve] printing currency, that's when I got motivated to work on this," says Mr Fruth. "I became frightened as a citizen." One year later, Republicans swept the midterm elections. Democrats lost hundreds of seats in state legislatures. Because 2010 was a census year the newly empowered Republicans were in a position to oversee redistricting, and thus in some places able to cement their new advantage. In 2009 there were 14 states where Republicans controlled the whole legislature. By 2017 there were 33. The landslide of 2010 opened a purely partisan path to a convention.

Since 2010 the BBATF has helped get resolutions passed in 15 states which previously lacked them. But its opponents have swung back into action, too. They fall into two camps: those who fear that an Article V convention will do what its advocates want it to, and those who fear that it will not. The first cohort consists primarily of liberals, who see a balanced-budget amendment as a vehicle for right-wing dreams of rolling back America's welfare state. "The right is very frustrated with Congress's inability to cut these social-safety-net programmes, and this is their backdoor way to do it," says Chris Taylor, a Democratic assemblywoman in Wisconsin. At a conference held in 2013 by the American Legislative Exchange Council, a group that writes model conservative bills for state lawmakers to introduce, Ms Taylor remembers hearing delegates talk about "the purpose being to kneecap the federal government and prohibit it from regulating and spending in every area except national defence."

A larger group of critics, whose strange bedfellows include the Birthers, the American Civil Liberties Union and Common Cause, has focused on the risk of a runaway convention veering off into non-budgetary topics. The opportunity to propose amendments without the normal hurdle of getting them past two-thirds majorities in both the House and Senate might prove hard for ideologues to resist. Would conservative delegates really vote against, say, a separate amendment assert-

Phoenix from the ashes

Number of US states with active applications for:



ing that the protections of citizenship start at conception?

Arguments like this have worked in some more liberal states. Delaware, which passed an application for a balanced-budget amendment in 1976, rescinded it last year; New Mexico, Maryland and Nevada followed suit in 2017. But that tactic seems to have run out of room; none of the remaining 27 states looks likely to rescind. Instead the focus is now on the seven states with Republican-controlled legislatures that have yet to request a convention: Idaho, Kentucky, Minnesota, Montana, South Carolina, Virginia and Wisconsin. In some of these states, opponents are putting up a strong enough fight that a convention is not a foregone conclusion. In March the Idaho Senate, where Republicans hold a 29-6 majority, shot down an Article V application.

Virginia's House of Delegates approved an Article V application in 2016, but Richard Black, a Republican state senator, has helped stymie the resolution's progress with warnings of devious Democrats hijacking a convention. "They could change freedom of religion to say certain teachings from the Bible are hate speech," he told supporters by e-mail in 2015. "They could take away our right to own a gun."

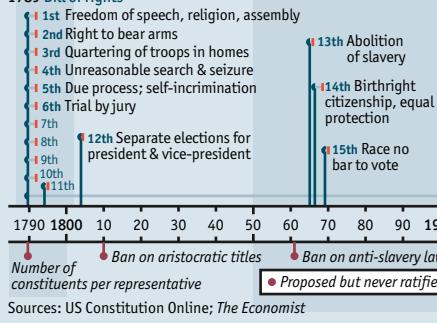
And there are indeed people on the left who like the idea of turning such a convention to their own ends. Two Republican majorities in Congress alongside a Republican president have made the idea of restraining the federal government more appealing to liberals. An Article V convention has a prominent advocate in Lawrence Lessig, an idealistic law professor at Harvard, who argues that it is the only way to achieve campaign-finance reform. Mr Lessig envisions a grand bargain of "electoral integrity for fiscal integrity", in which the left would reduce the amount of money in elections and the right would reduce the amount spent by government.

To allay the fears that Mr Black and Mr Lessig might stir in Republican hearts, the BBATF and cos insist that a convention could put forward amendments only on the subjects listed in the states' applications. Sponsors in some states, such as Wis-

Just a few edits

Amendments to the United States constitution, subject

1789 Bill of rights



►consin, have proposed state laws that would ban delegates from casting votes on unrelated topics. But Article V itself says nothing about limiting the scope of a convention. Indeed, it says nothing about many issues which, were a convention to be called under its auspices, would become contested: who would attend; whether it would be open to states that had not called for it; what limits might be placed on its delegates; by what majority an amendment would need to pass to be proposed; and so on.

In the absence of such guidance the BBATF convened a meeting in Phoenix this September to hammer out its own rules for a convention. In spite of a raucous group of protesters—one dressed as George Washington, complete with wig and stockings, and another wielding a sign scolding the delegates “You’re No Hamilton”—they agreed to give each state one vote regardless of population, and to limit the subject matter to the issue named in the states’ resolutions, even if a supermajority wished to add new topics.

But fun as they were to debate, the recommendations from the pow-wow in Phoenix have no formal standing. Nor do the rules that passed the Senate (but not the House) in 1982 for the convention on the balanced-budget amendment then being proposed, which would have seen the senior senator of the majority party and the Speaker of the House preside over the convention, and required a three-fifths vote of delegates to establish rules of procedure. If Congress does call an Article V convention, it can also pass a new law governing the delegates' behaviour.

But if the convention ignores such stric-

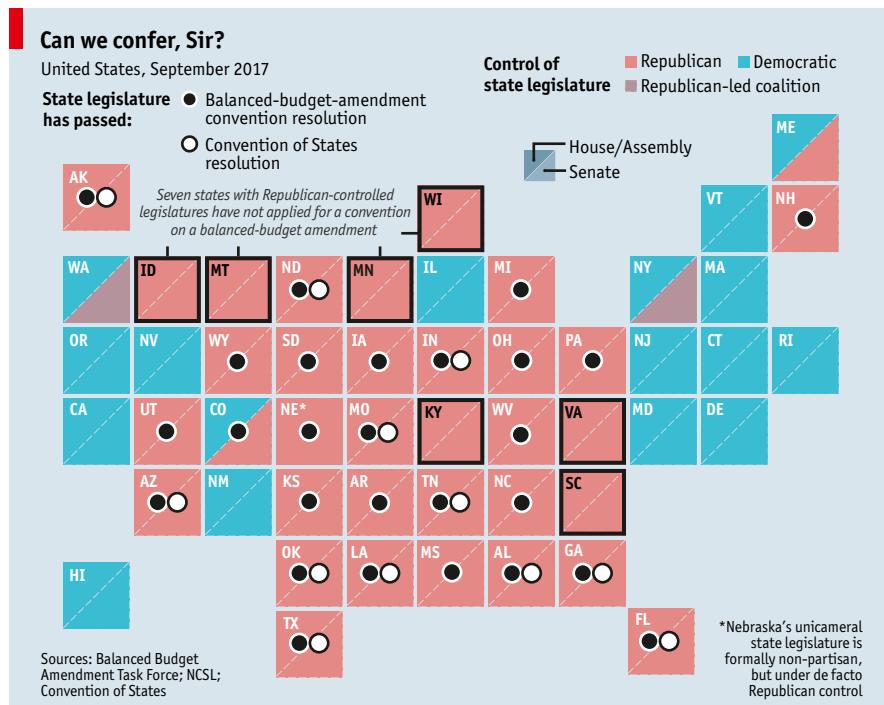
tures, there might be no way to enforce them. Once a convention was under way, its procedures would almost certainly be immune to judicial review. In 1939, when the Supreme Court refused to set a ratification deadline for a proposed constitutional amendment, it established a precedent that the mechanics of amendments are a "political question", reserved for elected branches of government. "There is absolutely no force that can override what the convention does," says David Super, a professor at Georgetown Law. "Congress can send them rules, state legislatures can send them rules, but they can do what they want. I'm not sure there'd even be one vote for blocking it on the Supreme Court. The precedent is that strong."

Liberated from the fold

The convention's freedom applies only to proposing amendments. Those changes still need to be ratified by 38 states—which proponents of a convention say offers a crucial check on anyone doing anything they do not approve of. Mr Lessig dismisses Cos's wish list of amendments as “a certain loser” at the ratification stage. Mr Meckler says Mr Lessig is “fantasising” about a campaign-finance amendment: “Political reality makes [it] unviable.”

But the logic of a convention might argue against such purity. The delegates, expecting the support of the solidly Republican state legislatures that had called the convention, would know they needed some split legislatures for ratification. Would they really be above crafting their amendment so as to contain something enticing to the other side?

There is also the possibility that Con-



gress could choose ratification by means of state conventions. This is a constitutionally approved alternative to ratification by state legislatures, which has so far been used only once—for the amendment that repealed the prohibition of alcohol. In that case many states determined the make-up of their convention by a popular vote which in effect became a referendum on the amendment. As a balanced-budget amendment might, in some states, be more popular with the public than with legislators, it might be more easily ratified by this unusual route. Polls have consistently suggested that 65-70% of the public support such an amendment in principle.

There is also a long game to be played. The states do not have to ratify the amendment all at once, or in a rush. The 27th amendment, which prevents members of Congress from raising their salaries, was proposed in 1789; it did not get its 38th ratification until 1992. Unless the proposers put a time limit on their amendment's ratification—as has been the case for most 20th-century amendments—it can sit around accumulating ratifications in perpetuity. As Mason intended, the federal government would have no way to block the process. Though some states might in time try to rescind their initial ratifications, this would be another area where the constitution is mum and the courts will not venture.

And then there is, as there always seems to be, a nuclear option. Delegates could simply declare a new, lower threshold for ratification. Uniquely in matters concerning Article V conventions, there is actually some precedent for this. The Articles of Confederation, signed in 1777 and ratified by all 13 original states in 1781, required the unanimous consent of all states for any changes. The constitutional convention of 1787 ignored this, deciding that ratification by nine of them would be sufficient for their document to replace the articles. Unless Article V is amended first, a convention would have no constitutional power to change the ratification rules itself. But delegates still might try. "The sovereign people have the right to alter or abolish their form of government and change it to whatever they want," says Larry Greenley of the John Birch Society. "This is a convention that creates constitutions. It's a level above state legislatures, and can't be limited. We really believe that any Article V convention would have the ability to change the ratification process."

A legal requirement to balance the budget could, if it included no safety valves, greatly damage the government's ability to manage economic shocks. If it were carefully drafted, it might conceivably do a modicum of good. Whether that would be worth the risks of triggering an untested and remarkably poorly constrained constitutional mechanism with huge potential power though, is another matter. ■

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Politics in Japan

Hope springs

TOKYO

The prime minister may regret calling an early election

SHINZO ABE wants to be remembered for making Japan great again. He reckons that entails reviving the economy and getting more involved in the world. The problem is, those things take time. Earlier this year he persuaded the Liberal Democratic Party (LDP) to extend the maximum tenure of its leaders to give him a shot at remaining at its head until 2021. Now he needs voters to pave the way, too.

This week Mr Abe called a general election to be held on October 22nd, 14 months earlier than necessary. He says an early vote is needed because he has had a change of heart over how to use the ¥5trn (\$45 billion) in estimated revenue from a rise in the sales tax due in 2019. He now believes Japan should divert ¥2trn of that to education rather than using it all to pay down the public debt, which is almost 250% of GDP. He also says that Japan needs to have a discussion about North Korea.

Dishonest Abe

Few buy this explanation. Instead, observers assume that Mr Abe considers the timing expedient, for several reasons. First, his approval ratings are close to 50% again, having fallen to 30% or so in July following allegations, which Mr Abe denies, that he used his influence to help two friends win government permits. Mr Abe's bounce in the polls is primarily thanks to North Korea. It has rattled the usually sanguine Japanese by firing two ballistic missiles over

the northern island of Hokkaido and threatening to bomb the whole country into the sea. At such moments, voters feel safer hiding behind Mr Abe's skirts. He has strengthened relations with other countries (in part because former Japanese prime ministers have come and gone so quickly that meetings with counterparts never got past introductions) and has the ear of President Donald Trump.

Second, the Democratic Party (DP), the main opposition, was at a particularly low ebb when the election was called, even by its own dismal standards. It had opted for style over substance last year by electing Renho Murata, a former news anchor, as its leader. But she resigned after only ten months in the job. Seiji Maehara, its new leader, failed to revive the party's fortunes. Humiliatingly, it was attracting only single-digit support in most polls. After many of its MPs defected, Mr Maehara in effect disbanded the party on September 28th, telling its MPs to run as independents or join other parties. For Mr Abe it helps, too, that dissolving the parliament will spare him from being asked further questions about the scandals.

But even with the help of Mr Maehara and Kim Jong Un, North Korea's dictator, Mr Abe does not seem to think the campaign will be easy. On September 25th he said he would consider it a success if the ruling coalition retained a simple majority in the 465-seat lower house. That is a low

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bar, given that it currently holds over two-thirds of the seats. Few in the LDP see much risk of losing power (the party has run Japan for all but five of the past 62 years). But MPS are extremely anxious about how much its majority will shrink.

The main reason for Mr Abe's caution is Yuriko Koike, the governor of Tokyo, who is masterminding the creation of a new opposition outfit, the Party of Hope. Just hours before Mr Abe announced the election, Ms Koike upstaged him by declaring, at an event expected to reveal the name of a panda born at a zoo in Tokyo, that she would lead the new party. It has already persuaded 14 MPS to defect to it, mainly from the DP, and is likely to recruit many more. It plans to field candidates for at least 100 seats.

Ms Koike, a shrewd tactician, has repeatedly humiliated the LDP, of which she used to be a senior member. After it passed her over when picking a candidate for governor, she ran anyway, defeating the official LDP candidate. She then set up a local party which trounced the LDP in the election for Tokyo's assembly in July. To add insult to injury, her candidates formed an alliance with Komeito, which is in coalition with the LDP at the national level.

Some surmise that Mr Abe called the election early to give Ms Koike almost no time to set up her new party. But she is moving fast. In addition to courting MPS from the now defunct DP, the Party of Hope is also pursuing mergers or alliances with several smaller opposition parties. Were Ms Koike to build a largely unified opposition, she might even step down as governor to lead it.

Such a gamble could leave her political career in tatters. Yet it might do similar damage to Mr Abe's. Her talk of transparency and reform exploits voters' misgivings about the prime minister. They have ►

voted for him not out of love, but for lack of a plausible alternative. They have been especially dismayed by the scandals that have dogged him, damaging his standing much more than the various unpopular policies he has espoused: 60% say the allegations will influence how they vote.

The local media are already framing the election as a duel between Mr Abe and Ms Koike. But the two do not differ much in substance. Both want to amend the parts of the constitution that place restrictions on the armed forces; Mr Abe has said that he wants to put a change to a referendum by 2020. He also says he will push for a further stimulus of ¥2trn, but is also trying to appeal to fiscal hawks by pledging to go ahead with the tax rise. Ms Koike says she would delay the tax hike, but criticises Mr Abe for unsustainable spending. That she did a stint as an adviser on defence to Mr Abe, and then as defence minister, makes her a rival to Mr Abe even on his pet topic, security. (She has also lived in Cairo and speaks Arabic and English.) The Party of Hope's pledge to end Mr Abe's attempts to restart nuclear power plants that were shut

down after the Fukushima disaster in 2011 will also be popular.

Fully 42% of voters are undecided about whom to vote for, according to a poll taken before Ms Koike made her announcement. Another sounding, taken after it, put the Party of Hope's support at 18%—an impressive showing for a newborn party, but still trailing the LDP at 29%. Even if Ms Koike fails to win much support outside Tokyo, there are 91 LDP-held seats up for grabs in and around the capital. One prominent LDP lawmaker has defected to her party.

A loss of 14 seats would bring Mr Abe's coalition below the two-thirds threshold required to call a referendum to amend the constitution. That would be a setback, but not enough of a disaster to prompt a rebellion within the LDP. If he were to lose 50 seats or more, he might face pressure to step down, or at least to say that he will not run in the party's leadership election next year. Either way, the election seems unlikely to increase Mr Abe's clout—a worry for those who were relying on him to find a cure for Japan's ailing economy. ■

Elections in New Zealand

Coalition conundrum

WELLINGTON

Voters deliver an ambiguous verdict

BILL ENGLISH, New Zealand's prime minister, looked every inch the victor after the election on September 23rd. "We got better and better," he crowed as the count rolled in. "No one expected that just three weeks ago." His centre-right National party won 46% of the vote, putting it ten percentage points ahead of its main rival, Labour, with which some polls had suggested it was neck-and-neck. The result was remarkable not only because Mr English fended off Labour's telegenic new leader, Jacinda Ardern. It is also striking because, after almost a decade in power and despite a change in leadership, the Nationals seem as strong as ever.

Celebrations, however, are premature. Any leader who can command a majority in the 120-seat parliament may form a government. The Nationals have fallen just short, with 58 seats, but could easily get over the line by allying with the populists of New Zealand First, who won nine seats and 7.5% of the vote (see chart). The prime minister says that his party has the "moral authority" to begin a fourth term, yet Labour has not conceded defeat because it could theoretically stitch together a tenuous trifecta with New Zealand First and the Greens. Winston Peters, the leader of New

Zealand First, lost his constituency but will remain in parliament thanks to New Zealand's system of proportional representation. He now holds the balance of power.

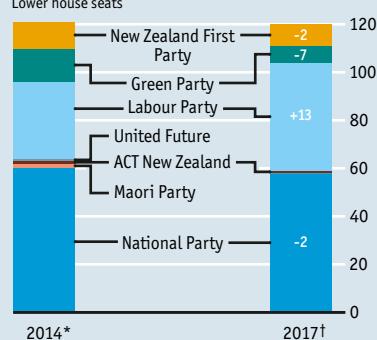
Mr Peters, who wants to ban foreign investment and give politicians free rein to meddle at the central bank, says he will not rush into "premature" decisions. When



Peters enjoys the limelight

Just short

New Zealand, general election results
Lower house seats



Source: New Zealand Electoral Commission

*Includes one overhang seat
†Excluding special-vote results due on October 7th

asked how long his negotiations might take, he threatened to throw a reporter into the ocean (they lasted two months the previous time he was kingmaker, in 1996). There is good reason to think that he will eventually walk up the aisle with Mr English, even though his campaign slogan this year was "Had enough?" Although it is not a requirement, the largest party has always formed the government. The economy has done well under the Nationals. And voters might see a coalition with Labour as overturning the results of the election, given the size of the Nationals' lead.

Ms Ardern, however, maintains that over half of New Zealanders "voted against the status quo". Labour gained 13 seats while the Nationals lost two. She says she still has a good chance of becoming prime minister. New Zealand First has more in common with Labour, which wants to cut immigration and prevent foreigners who do not live in New Zealand from buying homes. It has labelled the Nationals' free-market reforms as a "failed economic experiment".

Mr Peters has also feuded with bigwigs in the Nationals such as Steven Joyce, the finance minister. He might expect to hold greater sway over Ms Ardern, who needs him more, than over Mr English. And his two previous tie-ups with incumbents were followed by heavy losses for New Zealand First, notes Matthew Hooton, a political analyst, so it may be "in his interest to side with someone new". A similar logic might prompt Mr Peters, who is 72 and has already served as deputy prime minister, to refuse to join any coalition.

Another factor complicating coalition-building is that the election results have not been finalised. The ballots of 380,000 people who were either late to register, needed help voting or live abroad have yet to be counted. These have tended to skew towards Labour and the Greens in the past, and may yet result in a seat or two being added to either party's tally. The final count will not be known until October 7th. ■

Hill-country Tamils in Sri Lanka

A minority within a minority

DICKOYA AND HATTON

A subset of Tamils lags the rest of the country on almost every indicator

BOTH Sri Lanka's ethnic Sinhalese majority and the Tamil minority think of themselves as original, indigenous inhabitants of the island—an important prop to their political claims and counterclaims. But there is one group of Tamils who are relatively recent arrivals, and whose status has suffered accordingly. The first 10,000 "hill-country Tamils" came to work in the island's nascent coffee plantations in 1827 as indentured labourers. They marched on foot through rough terrain to isolated camps in the jungle, which they then set about clearing. Many died. But the prospect of work in Sri Lanka's booming tea industry, along with famine, poverty and landlessness back in India, led many more to make the journey.

Today the hill Tamils number almost 1m, accounting for over 4% of Sri Lanka's population. They live mainly on or near tea estates in the mountainous interior of the island, not in the north and east, home to most Sri Lankan Tamils. That put them outside the homeland that Tamil separatists fought for during the long civil war, and leaves them marginalised within the Tamil minority. They remain one of the country's poorest and most neglected groups.

Until recently, many hill-country Tamils were not entitled to vote. Laws passed after Sri Lanka became independent from Britain in 1948 stripped them of citizenship. Subsequent repatriation agreements saw large numbers deported to India without their consent. Sri Lanka eventually granted citizenship to the rest, but only in stages. Some 300,000 were stateless until 2003—with an "x" on their identity cards to highlight their lowly status.

The mean income among estate workers is a quarter less than that of other rural labourers. Some 11% of hill-country Tamils are poor, well above the national figure of 7%. More than half drop out of school by the age of 15. Only 2% pass any A-levels, exams taken at the age of 18, compared with 11% among other rural pupils.

Housing is another problem: 83% of Sri Lankans lived in their own houses in 2012, but only 22% of estate workers did. Two-thirds of the accommodation on plantations is in barrack-style "line-rooms" or sheds. These are not only rudimentary; their occupants' right to live in them is murky. But between 1980 and 2014 fewer than 1,000 houses a year were built on tea and rubber plantations, even though the area has Sri Lanka's highest fertility rate.



Not everyone's cup of tea

Hill-country Tamils also suffer from higher rates of malnutrition. Fewer than half have access to safe drinking water. At a plantation near Hatton, a family of six crams into a single tiny room, built in the 1930s, with no running water and only a primitive, shared latrine. The oldest child, who is 16, has already dropped out of school to care for her younger brother, who has heart problems. There is electricity, but no modern appliances.

Small wonder that the young are quitting the plantations in search of work in garment factories or on construction sites elsewhere in the country. Those that remain are becoming more politically active. In a paper presented last year to a government task force looking at how to defuse communal tensions in the wake of the civil war, local activists demanded an apology

from the state for the disenfranchisement, deportation and neglect of hill-country Tamils. There was much talk of the "restoration of dignity and respect". The government has paid some attention, promising to make it easier for Tamils living on estates to gain title to their homes.

Some hope that greater knowledge of their circumstances will help. In May Narendra Modi, India's prime minister, paid a visit to Dickoya, in the heart of tea-growing country. To rapturous applause he announced that his government would build 10,000 more cottages for locals in addition to 4,000 already completed. "People think Sri Lankan Tamils mean only those of the north and east," said T. Ravi, a bus conductor who attended Mr Modi's rally in Dickoya. "But now they know about us and can do something for us also." ■

Fighting love jihad in India

Invasive the bedroom

DELHI

Indians work themselves into a frenzy about interfaith marriages

THE older woman's slaps come quick and hard, followed by a shrill, "Have you no shame?" The younger woman sits still, eyes downcast, holding a hesitant hand to her stinging cheek as if in disbelief. Captured earlier this month in the city of Aligarh, 140km south-east of the Indian capital, Delhi, this little act of violence was mild by the standards of videos that go viral across India's 1.2bn mobile phones.

Yet the scene was widely shared, and for compelling reasons. The two women were complete strangers. The older one

happens to be Sangeeta Varshney, a prominent local member of India's ruling party. The younger woman, who is Hindu, had been spotted sitting in a teahouse with a man who is Muslim. In a later interview on television, Ms Varshney explained that as a mother and a Hindu herself, she had a God-given right to hit the other woman. This was, she continued, a clear-cut case of "love jihad".

Ms Varshney is far from alone in believing that the 80% of Indians who are Hindu face a concerted, predatory effort to entice ►►

► their womenfolk away from the faith. One populist Hindu organisation's helpline claims to have "rescued" 8,500 girls from "love jihad". A website called Struggle for Hindu Existence carries endless titillating stories about Muslim youths luring Hindu maidens into wickedness. Repeated police investigations have failed to find evidence of any organised plan of conversion. Reporters have repeatedly exposed claims of "love jihad" as at best fevered fantasies and at worst, deliberate election-time invention.

Holidays in South Korea

Korea break

SEOUL

As the world frets about the North, Southerners are learning to relax

SOUTH KOREANS are packing their bags. Perhaps 1.3m of them will leave the country this week. The last remaining international flights are selling out fast. Tickets on trains out of the capital, Seoul, are a hot commodity too. A few Seoulists have been sleeping at train stations, in the hope of nabbing one. The frantic exodus has nothing to do with the latest exchange of barbs between Donald Trump and Kim Jong Un, North Korea's ruler (see Banyan). Instead, it marks the start of Chuseok, the harvest festival, which usually lasts for three days but this year will stretch for ten. That is thanks to Moon Jae-in, South Korea's president, who decreed an extra day off to join up a series of tantalisingly close public holidays and weekends.

Mr Moon reckons Koreans need a break. There is plenty of evidence to support the idea. Workers in South Korea toil for more hours each year than those in any other member of the OECD except for Mexico. In 2015 more than 20% of employees slogged for at least 60 hours a week, compared with 9% in Japan and 4% in America.

Even when they have the right to time off, many do not claim it. According to a survey published in July by the Korea Tourism Organisation, on average salaried workers take fewer than eight of their 15 annual holiday days. "There's a sense that if you want to further your career or get a promotion, you have to show loyalty to the company by working longer hours, late at night or [at] weekends," says Lee Byoung-hoon, a sociologist at Chung-Ang University in Seoul.

Mr Moon promised more downtime before he was elected in May. He pledged to make taking holidays mandatory and to consider increasing the entitlement to 20 days to protect what one adviser calls "the right to rest". The extended Chuseok could be the first of many extra one-off breaks. Mr Moon is also practising what

tions. Indian law erects no barriers to marriages between faiths, or against conversion by willing and informed consent. Yet the idea still sticks, even when the supposed "victims" dismiss it as nonsense.

In May, a court in the southern state of Kerala summarily annulled a five-month-old marriage on grounds that the wife, a convert to Islam, had disobeyed her parents and been lured into a potentially dangerous liaison with a Muslim man. Sensitivities in Kerala have been high since the

discovery, last year, that several newly-wed Muslim couples had emigrated to fight for Islamic State. Still, it seemed bizarre for a judge to order this 24-year-old woman, who had converted a year before meeting her future husband, while studying at a medical institute, to return to her parents' house. She has been held there ever since, under police guard and, say the few who have attempted to visit her, against her will. Even as her husband mounted a legal challenge to the divorce ruling, India's supreme court in August ordered a special anti-terror unit to investigate his background.

It is not only Muslims who are accused of preying on Hindu women. A 28-year-old Hindu woman filed charges against a yoga centre in Kerala earlier this month, alleging that she had been held there against her will for three weeks, abused and indoctrinated in an attempt to make her divorce her Christian husband. Her affidavit alleged that another 60 women had been held at the centre in similar circumstances.

And it is not just Hindus who harbour suspicions. Earlier this month a Buddhist organisation in Ladakh, a mountainous region on the borders of Tibet, issued a stark warning. All Muslims in the area would have to leave, or risk the consequences, unless Syed Murtaza Agha "returned" his wife, Stanzin Saldon, to her Buddhist family. For several days Muslim-owned shops in the region stayed shut, but the danger seems to have passed. Miss Saldon, a 30-year-old development consultant who says she converted to Islam five years ago, published a persuasively eloquent letter in Indian newspapers. It states bluntly that she married out of love and for no other reason, and feels insulted by the accusation that she might not be able to think for herself. The Buddhist elders, who had termed conversion a "wicked and depraved act", have fallen silent.

"Women often become a marker when sharper lines get drawn between communities," says Charu Gupta, a historian at Delhi University. Efforts by the ruling Bharatiya Janata Party (BJP) to build inter-caste alliances among Hindus have brought religious differences more to the fore, she believes. Still, says Ms Gupta, it is a shame to see state institutions and India's courts take on the role of prejudiced patriarchs: "They have internalised a demonisation of the Muslim male, and see women as essentially foolish and immature."

In Aligarh, police did not arrest Ms Varshney for assaulting a young woman. They did not bother the Hindu vigilantes who had hauled the couple out of a tea-house. But they charged the Muslim boyfriend with "lewd behaviour". Only several days later, following a public outcry over the video clip and at the prompting of local women's-rights groups, were charges pressed against Ms Varshney. ■



It does not come naturally

he preaches. Within a fortnight of his inauguration, he took a Monday off.

But more than a third of Koreans will work over the holiday, according to one survey. Many small businesses will stay open. Older workers are less convinced by the president's vision of a life of leisure. Mr Lee says the "workaholic mentality" is an "old-fashioned perception from the development era" that followed the Korean war, when workers were encouraged to toil long hours to make the nation rich. Kim Tae-hyun, a 64-year-old maintenance worker, will work 12-hour shifts as normal this week. He rolls his eyes at younger Koreans' desire for a break. "I think ten days' unbroken holiday is a strain on employers," he says, gulping a little fresh air outside his office. "In Europe, they have one or two months off. But not in our country. It's not the way our system works."

BARCELONA LONG-TERM STRENGTH



Penthouse apartment in Poble Sec with roof terrace

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 ATHENA ADVISERS

Banyan | The long watch

It is too late to get North Korea to give up its nukes, but not to stop it from using them



TWO vain, prickly, strutting loudmouths hurl colourful threats at each other. Were they hip-hop artists engaged in a rap battle, it might be entertaining. But since they both have nuclear weapons, it is not. At the UN General Assembly on September 19th President Donald Trump threatened to “totally destroy North Korea”, a country of 25m, along with “Rocket Man”—its leader, Kim Jong Un. Mr Kim retorted that he would “surely and definitely tame the mentally deranged US dotard with fire”. Meanwhile, the North Korean foreign minister raised the prospect of testing a thermonuclear bomb over the Pacific, and American strategic bombers made a show of force off North Korea’s east coast. North Korea declared that tantamount to a declaration of war, and said that next time it might shoot them down.

For Americans it is as if a half-vanquished enemy is “rising zombielike from the crypt of...dimly remembered wars”, as Blaine Harden, a veteran writer on North Korea, puts it. Unlike the Vietnam war, which is perennially relived and relitigated, the Korean war of 1950–53 is largely forgotten in America. Yet it brought about the utter devastation of the Korean peninsula, along with the deaths of 2.5m civilians and 1.2m soldiers, among them 34,000 Americans. After a massive Chinese intervention, it ended with Korea as divided as it had been before.

The history matters. The inescapable lesson is that another Korean conflict would carry such a price that risking it should not be an option. Those who appear to think that military action is a plausible route wildly overplay the chances of a swift, clean result and vastly underplay the likely costs of conflict, particularly if it went nuclear, or if the North deployed its biological and chemical weapons. Scott Sagan of Stanford University reckons 1m people could die in the first day of a second Korean war.

America suffers from Korean amnesia partly because, as Mr Harden argues, an inglorious stalemate is not easy to celebrate (even the 1970s sitcom *M*A*S*H*, although set in Korea, was really about the Vietnam war, then under way). It is worse, though. Yes, Americans were fighting a just war, defending South Korea against Soviet-sanctioned invasion by the Communist North. They were supported by an “uncommon coalition” of countries—from Turkey to Thailand—in what was the first instance of collective security agreed upon by the young UN. Yet the Americans

prosecuted the war up to their chests in a moral swamp.

Senior commanders turned a blind eye to atrocities by South Korean forces against suspected Communists and prisoners-of-war. Worse, the American destruction of the North’s towns and cities was near-total, leading to unconscionable civilian suffering. In early 1951 Douglas MacArthur, the American commander of UN forces, was even eager to drop atom bombs on Chinese forces that had come to the North Korean regime’s defence.

Better forgotten. Yet in North Korea, the war is ever-present. North Koreans are ceaselessly reminded of the American destruction. Mr Trump, sounding like a latter-day MacArthur, plays right into the propaganda. Above all, North Koreans have all along been told it was the American-backed South that started the war, rather than a North Korean invasion of South Korea.

Mr Kim surely does not believe that lie. He and his generals know the war went awfully for his grandfather, Kim Il Sung. He approached the invasion with breathtaking naivety. The South would rise up in support of him; the Americans would not commit troops; it would all be over in three days. He was wrong on all this and more. When Communist China committed 300,000 troops to stop the creation of a united, US-allied Korea, the “Great Leader” was shunted aside as military commander and had to twiddle his thumbs while others saved his odious regime.

Things would go far worse for North Korea a second time round (not least since ties with China, which does not want to pick a fight with America over North Korea, are deeply strained). Mr Kim surely knows this. But does Mr Trump know that he does? Mr Kim cannot be dissuaded from seeking a nuclear arsenal, for he sees it as his chief guarantee against American attack. But he realises that using it would bring about his destruction. So the big risk is an accidental war, caused by each side misreading the other’s intentions. That is what America must guard against.

Cold comfort

Instead of swagger and threats, America should prepare for an extended cold war, containing and deterring a new nuclear power. Some of the military implications are awkward. For instance, beefing up missile defences or bringing tactical nuclear weapons back to South Korea would hugely unsettle China (see page 33), straining the world’s most crucial relationship.

Other necessary steps will be almost as awkward. If misreading the other side’s intentions is the risk, one answer is to invite North Korea to open an embassy in Washington, however galling that may feel; a hotline between Pyongyang and Seoul should also be revived. Spycraft and diplomatic skill are needed for an effective regime of sanctions against the North, but so is flexibility—for instance in trading reassurances for early notice of North Korean missile tests. And America must find new ways to signal to ordinary North Koreans that their regime is the real target, not them. This is not impossible, as trade and defector networks manage to bring much information from outside into the North.

Mr Trump has as little patience as he has a taste for history. But, as Mr Sagan points out, an enduring strategy of deterrence and containment worked not only with the Soviet Union. It also, for over 60 years, discouraged the North from invading South Korea again. And for all that it now possesses nuclear weapons, Mr Kim’s regime is still tinpot and decrepit, atop a mountain of resentment and wasted human lives. The chances still must be that, one day, the North will collapse under its own contradictions. Just wait. ■



Also in this section

32 Boot camp for students

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Legal system

See you in court

SHANGHAI

In cases that do not touch on politics, justice is more forthcoming

ONE CHILLY day last winter Zhang Jie, suffering from a fever, stopped his car on the side of a busy road to let his wife run into a shop to buy a thermometer. Within seconds, a traffic cop raced over to give him a ticket—he was still behind the wheel but in a no-parking zone. Incensed, he sued the police. At a hearing this month, Mr Zhang, a trim young man, sat across the polished floor of the Shanghai No. 3 Intermediate People's Court from two uniformed police officers. Arguments proceeded for nearly an hour before the judge, perched on a high-backed wooden chair, suggested a solution: Mr Zhang should withdraw his lawsuit and the police cancel their punishment. Both sides agreed.

Although the stakes were low, it was striking to see an ordinary citizen confront agents of the government in a formal setting. Over the past two years Chinese courts have heard a growing number of such disputes, on matters ranging from insurance claims to the demolition of property to make way for construction projects (the woman pictured is arguing with a policeman in Beijing who is trying to stop her protesting about eviction from her home). These cases point to a sharp divergence of trends in the justice system under Xi Jinping as he prepares for a Communist Party congress in October that will launch his second five-year term as the party's head.

For those hoping that China might evolve towards true rule of law, Mr Xi's ten-

ure has been a big disappointment. Scores of human-rights lawyers and activists have been detained, harassed and subjected to ever tighter surveillance. Mr Xi has waged his anti-corruption campaign primarily through the party's secretive disciplinary organs rather than the courts. More than 99% of criminal cases still yield guilty verdicts. Earlier this year China's most senior legal official decried judicial independence as a "false Western ideal".

More so than his predecessors, Mr Xi has left no doubt that the law answers to the party, not the other way around. But within the parameters of the permissible, and mostly on matters to do with economic affairs, the government is trying to

make the administration of justice more fair. It has introduced reforms to modernise the legal system and, in a limited number of areas, hold officials to account.

Start with administrative litigation, which usually involves private citizens suing government officials. Last year courts agreed to hear 330,000 such cases, more than double the total in 2013—the first full year of Mr Xi's rule (see chart). Many of these involve disputes over land and housing, the most frequent sources of conflict between ordinary people and the state. Other common cases relate to pension benefits, compensation for workplace injuries and traffic tickets. Benjamin Lieberman of Columbia Law School says that suing the government over such matters is becoming routine in China.

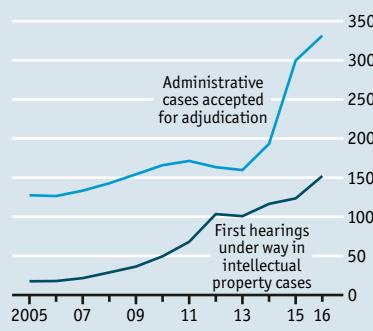
There have also been notable improvements in the arena of commercial law. Last year Chinese courts began hearings in 152,000 intellectual-property disputes, up nearly tenfold over the past decade. The explosive growth in IP cases has been fuelled by the growing litigiousness of domestic companies, which have more to protect as they become more innovative. But foreign companies are also benefiting. In August a court ordered three Chinese firms to pay 10m yuan (\$1.5m) in damages to New Balance, an American footwear company. It was one of the largest trademark-related awards ever made by a Chinese court.

Luke Minford, chief executive of Rouse, a consultancy, has calculated that foreign companies win 74% of their IP cases against Chinese firms, well above the 55% success rate for plaintiffs in cases that only involve Chinese entities. There are, to be sure, still unwritten limits. Dan Harris of Harris Bricken, a law firm, says it is a "very different calculation" if the company being sued is a big state-owned enterprise.

Yet there is a glimmer of hope that Chi- ►

Busy at the bench

China, new legal cases, '000



►na's antitrust law, which has been used to impose swinging penalties on foreign companies, may start to work against big domestic targets. In August, for the first time since the law went into effect nine years ago, a court ruled against the government. Thsware, a software company, had sued the education department of Guangdong province in the south, after it granted an exclusive contract to a rival. Expectations have also been raised by moves since 2014 to curb competition-distorting behaviour by local governments. The central authorities ordered the western province of Gansu to stop using only a single supplier of satellite navigation systems; they broke up a telecoms cartel in Yunnan, a province in the south-west; and they told the northern province of Hebei to stop giving toll-road discounts to local transport firms.

China is also slowly raising legal awareness within its bureaucracy. The State Council, or cabinet, last year decreed that government institutions from the county level upwards must hire legal advisers or in-house counsel by the end of this year. It wants them to offer opinions on policies and projects, and to help in the event of disputes. Since mid-2016 officials have also been required to assess whether new policies distort markets before implementing them. But departments responsible for supervising such issues tend to be weak. "With every step they take, they will be bumping into someone's interests," says Huang Yong of the University of International Business and Economics in Beijing.

The big increase in lawsuits against the government stems from a change, introduced in 2015, which makes the filing of suits purely a bureaucratic exercise. So long as litigants submit all the paperwork, courts must agree to hear their cases. Previously they could reject them without giving a proper explanation. Chen Ding, a former prosecutor in China who now teaches at the University of Sheffield, says this reform has dovetailed with Mr Xi's anti-corruption campaign, which has discouraged judges from taking bribes. "The cost of using the formal legal system has been driven down," she says.

Proceedings are also becoming more transparent. Since 2014 all courts have been required to upload their decisions to a website run by the Supreme People's Court. At the last count there were more than 34m cases on the website, with thousands added every day. Some of them are also live-streamed online, giving the public a chance to peer into courtrooms around the country.

There are, unsurprisingly, limits to this openness. Courts have been told to refrain from publishing so-called "inappropriate decisions", a category that includes juvenile crimes but also state secrets. Roughly 40% of cases, including many with political undertones, remain inaccessible. Also

Military education

Students with guns

BEIJING

Undergraduates have to endure patriotic boot camp

IN A concrete stadium in the north of Beijing, some 2,000 men and women are rehearsing a military tattoo. They march in a circle to music pumped from loudspeakers, while footage of tanks and helicopters plays on a screen above their heads. One group armed with rifles heads to the middle of the arena to practise basic drill. After some square-bashing, they lower their barrels and charge, bellowing, "kill, kill, kill!"

These are not soldiers but students: teenagers about to begin their courses at Tsinghua, one of China's most prestigious universities. Their rifles are wooden replicas, capped with rubber for safety; their uniforms are ill-fitting. Military training is compulsory for first-year students at universities in China, as well as for entrants to senior high schools. It is also commonly given to students at junior high schools. Courses are usually between two and three weeks long.

Some educational establishments began requiring this in the early years of Communist rule in the 1950s. After the army was deployed to crush student-led protests in 1989, the government became more enthusiastic about instilling military discipline at schools and on campuses; training of new students has since

become universal. The National Defence Education Law says that one goal is to develop "patriotic enthusiasm".

The students at Tsinghua are lucky, for they do most of their training on campus. But some universities pack freshers off to grim camps in the countryside, where they have to stay up all night on sentry duty and endure embarrassing communal showers. Drill takes up much of the schedule. Some students get weapons training, but few get to fire more than a couple of shots. Lessons in military strategy and history round off the experience, as do choruses of revolutionary songs.

Boot-camp boosters argue that a spell in fatigues can help to toughen up children who have been spoiled by doting parents and grandparents. As they see it, the country's erstwhile one-child-per-couple policy created legions of pampered softies. But there are many critics, too: parents who fret about leaving their little darlings in the hands of ornery sergeants, and students who complain (occasionally on social media) about long hours of standing still and unpalatable rations.

The army may be heeding such objections. Some Chinese lament that courses are becoming cushier. But in recent years several cases of bullying and brawling have come to light. This year state media reported on a punch-up between a student and instructors at a south-western university. One fight in 2014 left more than 40 people injured.

Some students eventually grow wistful about their weeks in camouflage—a period when lasting friendships are often forged by having to cope with "crappy things together", as a recent graduate puts it. That is just as well, because the government is unlikely to scrap the scheme. It is trying to tighten ideological control on campuses in order to curb the spread of liberal values. That fits well with the Chinese army's mission, which is above all a political one: to keep the Communist Party in power.



A new form of water torture

absent from the record is the guidance that judges receive from the party committees that oversee their work.

Nevertheless, the picture that emerges from the flurry of reforms is of a Chinese legal system becoming more professional and fairer when it comes to strictly commercial disputes and basic administrative problems. There is no contradiction between this trend and the government's in-

creasing readiness to use the law to lock up dissidents. Both are aimed at reinforcing the party's grip. A well-functioning court system is essential for the health of the economy. Giving aggrieved citizens outlets to challenge the government without resorting to protest is good for social stability. As for cases with wider political ramifications, submitting them to impartial justice is simply too big a risk, the party reckons. ■



America, China and North Korea

What next

WASHINGTON, DC

North Korea has brought the superpowers closer. Next it will push them apart

MURDEROUS, thin-skinned and in possession of nuclear weapons, the North Korean dictator, Kim Jong Un, has one good deed to his name: he has united America and China. Max Baucus, America's ambassador to Beijing until January 2017, recalls the Chinese president, Xi Jinping, privately expressing "disgust" at Mr Kim's reckless pursuit of nukes and missiles to carry them to other continents. Mr Xi's frustration with North Korea's hereditary despot stands out as "the strongest statement that I have ever heard Xi make", says Mr Baucus. China has never sounded as closely aligned with America when it comes to using sanctions and diplomatic pressure, in a last-ditch bid to change how Mr Kim calculates his regime's interests.

Breaking a long-standing taboo about imagining the Kim regime's collapse, a well-connected Chinese academic, Jia Qingguo, was allowed to publish an essay in September suggesting that China, America and South Korea should discuss such contingencies as refugee flows and which country's troops should secure loose nukes in a post-collapse North Korea. Donald Trump hailed China's role in getting tougher North Korean sanctions through the UN Security Council by unanimous vote. After months of discreet arm-twisting by American Treasury officials with the power to levy huge fines, or exclude them from American markets, Chinese banks are shutting off finance to North Koreans.

Yet the two powers are still capable of blaming each other. Both claim that a nuclear-free Korean peninsula is their highest priority for that region. But American officials have long accused China of placing still more value on stability in North Korea, and thus approving any level of sanctions on the rogue regime short of those painful enough to actually work, starting with a cut-off of oil and other energy supplies.

China, in turn, declares that America is disingenuous to say that its dearest wish is a nuclear-free Korean peninsula, when in truth it is most worried about American national security—explaining why successive presidents from George H.W. Bush onwards have focused not just on the Kim dynasty's pursuit of nuclear weapons, but on its development of missiles that could carry those weapons to American soil. Nationalist hardliners accuse America of exaggerating the North Korean threat to pursue its real goal, namely corralling China. Other Chinese officials do not go that far, but even the most internationalist argue that sanctions alone cannot solve the Korean crisis. They chide America for refusing to offer the sort of concessions that might conceivably induce the Kim regime to change course, such as a wholesale scaling-back of American military forces in the region and of exercises with South Korean and Japanese allies.

Unfortunately for relations between the world's two biggest economies, China

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will hate the next steps that America is likely to take on North Korea. Evan Medeiros, until 2015 the senior director for Asia in Barack Obama's National Security Council, says that when the Chinese accuse America of refusing to engage in talks with the regime, this is largely "posturing". But behind it lies a truth, that "sanctions won't stop North Korea". When battling the proliferation of the deadliest weapons, sanctions are always in a race with technology, says Mr Medeiros, now with the Eurasia Group, a consultancy. "Kim Jong Un is close to grasping the brass ring. We have probably lost the race and need to think about deterrence." This could include deploying new missiles and missile-defence systems in South Korea and Japan, and perhaps another aircraft-carrier in the region.

The South Korean defence minister, Song Young-moo, told his country's parliament that he had asked America to consider the return of tactical nuclear weapons to the Korean peninsula. Tactical nuclear weapons—often meaning smaller, battlefield weapons or air-dropped bombs not covered by strategic arms treaties—were withdrawn from South Korea by George H.W. Bush in 1991, as a prelude to talks with North Korea two years later. At the height of cold-war tensions in the late 1960s and 1970s, there were over 700 tactical nuclear weapons in South Korea, in missiles, bombs and even nuclear landmines, notes Joel Wit of the US-Korea Institute at the Johns Hopkins School of Advanced International Studies in Washington.

Conventional forces will need to be built up if American security guarantees to allies are to remain credible, says Mr Wit. Japan and South Korea must debate their need for everything from anti-missile systems to more offensive weapons, such as missiles and advanced aircraft. That challenges Chinese policy, which is to press ➤

► America and South Korea to limit the deployment of even defensive weapons, such as the THAAD anti-missile system. THAAD's powerful radars, installed southeast of Seoul, can see deep into China.

The Senate passed a defence-spending bill in September with \$8.5bn to strengthen missile-defence systems. Some of the money would buy 14 new ground-based anti-missile interceptors at Fort Greely, Alaska, taking the arsenal there to 58.

Senator John Barrasso of Wyoming, a Republican member of the Senate foreign-relations committee, reports "a lot of appetite" in Congress for funding anti-missile defences. With North Korea seeking the means to hit American territory with nukes, it would be "malpractice" not to do so, says Mr Barrasso. A member of the Republican leadership in the Senate, he would like to "turn down the heat a bit" on some of the pugnacious tweets from Mr Trump aimed at North Korea. Strikingly, there is no war party in Congress banging the drum for unilateral action. Mr Barrasso sees the Senate stressing work with allies.

Still, cold-war theories of deterrence are being dusted off, with such jargon as "second-strike capability"—the certainty that a country attacked with nuclear weapons can retaliate massively. Douglas Paal, a senior Asia hand in the Reagan White House and both Bush administrations, approves of the Senate plan to place more interceptors in Alaska, in part to gain leverage over China. "We need to layer up more missile defence. China needs to see that their second-strike capacity is really deteriorating, which hurts them." Mr Paal, who runs the Asia programme at the Carnegie Endowment for International Peace, a think-tank, is in frequent contact with envoys of governments including China's and, recently, North Korea's. He concedes the need for talks with the Kim regime, alongside containment and deterrence, but notes that in previous negotiations, North Korea wanted an end to American defence alliances in Asia and to America's troop presence in South Korea: "So we can't get there."

A policy of containment would not just strain relations with China as new American weapons bristled in Asia. Global non-proliferation regimes would be tested, not least because a North Korea facing crippling sanctions might see selling nuclear technology as a lifeline. Perhaps China's greatest nightmare involves Japan feeling compelled to build nuclear weapons (it could quickly develop the technology). A Chinese build-up of warheads in response could result in India and then Pakistan increasing their stockpiles. The unity fostered by Mr Kim may thus prove short-lived. If he builds the arsenal he wants, China and America will be sincere in their shared dismay. But if America then prepares to contain him, a whole new Sino-American stand-off may begin. ■

Puerto Rico

A crippling blow

WASHINGTON, DC

The physical devastation wreaked by Hurricane Maria is just the beginning

THE full extent of the catastrophic damage Hurricane Maria has done to Puerto Rico is not yet known. The storm ravaged the island on September 20th, and then continued to deluge it with rain the next day. It knocked out the electrical grid—it will take months to restore power to the whole island—and put an end to most mobile communication. It rendered many roads and bridges impassable. (In the storm's immediate aftermath, before relief workers distributed satellite phones, some parts of the island could be contacted only by runners.) The Federal Emergency Management Agency is providing help, relying in part on the \$15.3bn in funding that Congress allocated for disaster relief earlier in September, after Hurricanes Harvey and Irma struck Texas and Florida, respectively. But the island's governor, Ricardo Roselló, is in no doubt that more help is needed. Otherwise, he says, the island faces a "humanitarian crisis".

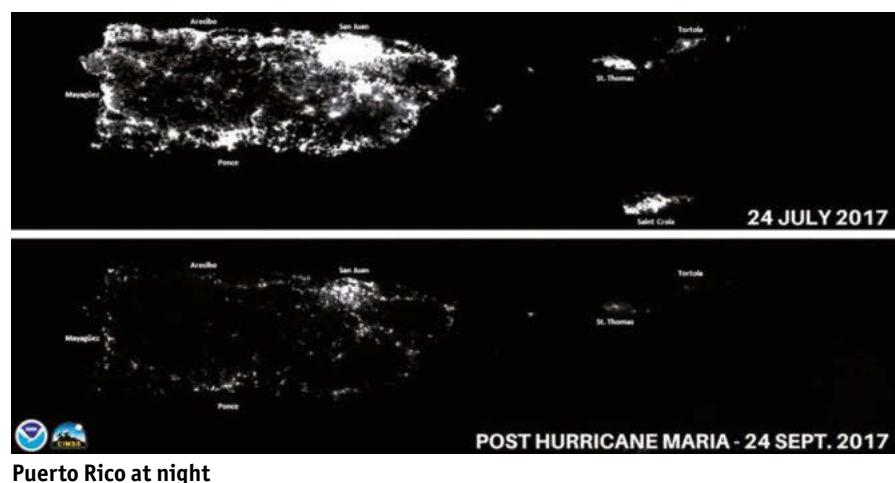
Even if that plea is met, it is unlikely to stop the long-term damage to the island. Before the storm, Puerto Rico already faced an economic collapse. Having borrowed too much, and seen its economy shrink almost every year since 2005, the island commenced bankruptcy-like proceedings in May. That was possible because of a federal law passed in 2016. Until then, unlike states and municipalities, it had no way to escape its unpayable \$123bn in debt and pension obligations (worth 180% of gross national income, GNI). The price for the escape route was a new financial oversight board, appointed in Washington.

The government had hoped to balance its budget over three years by imposing

austerity worth over 5% of GNI annually. But even before Maria struck, the oversight board did not think the plan was credible. It was insisting on furloughs for the island's public-sector workers to ensure the targets were met. Mr Roselló refused to comply, and faced a lawsuit over the matter in the island's federal court (he said he was willing to go to prison over the matter). That dispute now looks like a sideshow—just as well, given that the hurricane has caused the court to close indefinitely.

Puerto Ricans, who are American citizens, have been abandoning the island. At last count, it was losing on net 68,000 people a year, or 1.9% of its population. Those who have stayed are ageing, like the rest of America. Now Puerto Rico must also contend with people fleeing a natural disaster. A recent working paper by economists Leah Boustan, Matthew Kahn, Paul Rhode and Maria Yanguas examines American natural disasters from 1920 to 2010. It finds that a severe disaster lowers net migration into a given county by between 2.3 and 5.9 percentage points. Puerto Rico is no county; it has fully 3.4m residents. But even an effect one-tenth of that size would be disastrous, calculates Lyman Stone, an economist who blogs about migration. The effect also seems greatest in areas which are prone to disasters, perhaps because residents fear a repeat episode. In Puerto Rico's case, such a fear would be especially well-founded, given that climate change is likely to increase the intensity of hurricanes. Mr Roselló warns of a "mass exodus".

However, the island may not see the large scale depopulation that follows some catastrophes. Moving requires re-



sources, and 44% of Puerto Rico's residents earn less than the federal poverty line. Many high earners have already departed. In the decade to 2016, the number of surgeons and physicians on the island fell by almost one-third. A new IMF study finds that extreme weather events increase emigration, but only from places that people can afford to leave.

That, however, is hardly a comforting thought. The IMF's other findings are equally grim. Seven years after an average hurricane, typhoon or cyclone strikes a small country, output per head is almost 2.5% lower than it otherwise would have been. Even 20 years after being hit, economies typically have not fully recovered.

What can be done? Apart from ensuring the island gets immediate help—including suspending the Jones Act, which re-

quires all ships sailing between American ports to be built, owned and crewed by American citizens—there are several ways Congress could support Puerto Rico's economy in the long term. Lawmakers could extend the earned-income tax credit, a wage top-up for low earners, to the island's residents. They could ensure Medicaid, health insurance for the poor, is adequately funded (federal Medicaid contributions to Puerto Rico, unlike those to states, are capped). And it could waive the usual requirement that the island pay for 10-25% of its disaster relief.

The argument against doing these things is that Puerto Ricans do not pay federal income taxes. But the alternative is a vicious cycle of austerity, recession and a shrinking population, now compounded by a natural disaster. ■

Government spending

Fly me (private) to the Moon

WASHINGTON, DC

Tom Price discovers the joy of taking his own plane

CHOOSING the best aspect of modern American air travel is like choosing the least painful spot on one's face to be kicked by a donkey. Some are slightly worse than others; none is good. Cancellations, delays, breathing germ-filled air for hours with a stranger's knees digging into your lower back, the barking, groping security agents: no wonder people with sufficient means often prefer to hire their own planes.

But what if you want to take your own plane but you either can't afford it or do not want to pay? Tom Price, President Donald Trump's health secretary, hit on a novel solution: get the taxpayer to foot the bill. According to Politico, a politics news outlet, since early May Mr Price has chartered at least 24 private planes that have cost American taxpayers over \$300,000. Mr Price's predecessors had no problem flying commercial.

Spokesmen from his department claim Mr Price flew private only when commercial flights were unavailable, but that appears to be untrue. Many of his private flights were between cities with frequent (and, of course, much less expensive) commercial flights. On one occasion he used a private plane to get to a conference in San Diego, where he railed against wasteful spending. That trip cost taxpayers \$50,420.

Mr Price is not the only cabinet member averse to commercial air travel. Steven Mnuchin, the treasury secretary, asked to use a government jet to take him on his European honeymoon; that request was withdrawn, and Mr Mnuchin claims the story was "misreported". He



You are all I long for

and his wife did, however, take a government plane to Kentucky, where he saw last month's total eclipse of the sun from Fort Knox. He says the trip was to see Fort Knox and speak to business leaders in Kentucky. "Being a New Yorker," he said, "I don't have any interest in watching the eclipse."

Mr Price's spokesman also claimed his use of private jets was essential to "making sure he is connected with the real American people", tens of thousands of whom can be found at airports on any given day. Mr Trump said that he was "not happy" about Mr Price's travel habits, and that "we'll see" if he keeps his job.

Tax cuts

Deductive reasoning

WASHINGTON, DC

Republicans unveil a tax plan at last

FOLLOWING their failure to pass a health-care bill, the White House and Republican leaders in Congress are eager to move on to their next priority: tax cuts. On September 27th they released a sketch of a tax plan, after months of negotiations and several false starts earlier this year. The document—though still relatively short on detail, given the work that has supposedly gone into it—proposes the most significant change to the federal tax code since 1986. Whether it can be turned into passable legislation, or whether it instead meets the same fate as Republicans' health-policy ideas, remains to be seen.

Launching the plan, President Donald Trump reiterated his promise that the tax cuts would benefit "the middle class, the working men and women, not the highest-income earners". To that end, he promises a near-doubling of the standard deduction, the amount that can be earned before paying income tax. For an individual, it would rise to \$12,000, from \$6,350 today. That is much less generous than it sounds, because Republicans would also abolish the personal exemption, currently worth \$4,050, which performs a similar function. The total amount that could be earned tax-free would go up only slightly. The plan is also to raise the bottom rate of income tax, from 10% to 12%.

The top rate of tax, by contrast, would fall from 39.6% to 35%. (Mr Trump says Congress is free to create a new top tax rate for the super-rich, but few Republicans will be keen to take up that option.) Yet not every high earner will celebrate. Though the plan does not say so explicitly, Mr Trump seems to want to do away with the exemption, from federal income tax, of earnings used to pay state and local tax bills. Republicans argue, rightly, that this unjustifiably subsidises states that levy high taxes. Abolishing it would make many high-fliers in places such as Democratic-leaning New York and California worse off, even accounting for the fall in the headline rate of tax. That may allow Mr Trump to say that his changes to income tax do not benefit the rich, when averaging across states.

The same cannot be said of the planned abolition of the estate (inheritance) tax, which would benefit only those with assets worth \$5.5m or more. Nor does it apply to a large proposed cut to corporation tax, from 35% to 20%. Mr Trump argues that the benefits of a lower corporate tax would flow primarily to workers, in the form of ►

► higher wages. One of Mr Trump's top economic advisers, Kevin Hassett, was formerly a principal proponent of this view among academic economists. But it is not widely held. Most tax experts think that around four-fifths of the benefit of cuts in the corporate tax go to investors. The new 25% rate that is proposed for business owners who include their firms' profits on their personal tax returns would greatly benefit many high earners.

The likely abolition of the state and local deduction is the only big money-raiser in the plan. As a result, the proposal would increase government borrowing substantially. Republicans must persuade fiscal hawks to support it anyway. For now, that seems to be going well. The Senate Budget Committee is expected to approve soon a budget resolution that will enable tax legislation to raise borrowing by \$1.5tn over ten years. Most Republicans argue, fancifully, that tax cuts will trigger much faster economic growth, thereby plugging the hole. Another political challenge is persuading those whose constituents benefit disproportionately from the state and local deduction to scrap it. There are 52 such Republicans in the House of Representatives, according to an analysis by Bloomberg; several have already voiced their unwillingness to abolish the tax break.

Those drafting the law must also decide how long the tax cuts would last. As with health care, Republicans will try to pass the bill using a budget procedure which would allow it to clear the Senate with only 51 votes, rather than 60. But that means the plan cannot increase borrowing for more than a decade. Over to Congress. ■

Alabama's special election

Strange days

BIRMINGHAM

Stephen Bannon notches up a win

“THE political winds in this country right now”, said Luther Strange as he conceded Alabama’s Republican Senate primary to Roy Moore on September 26th, “are very hard to understand.” Thus ended a bitter six-week run-off campaign to choose a Republican nominee to fill the seat vacated when President Donald Trump appointed Jeff Sessions as attorney-general. Primary elections in off-years do not normally attract national attention, especially in single-party states such as Alabama. But this race turned into a proxy battle between Stephen Bannon, a firebrand who served as Mr Trump’s chief strategist until August, and Mitch McConnell, the Senate majority leader, with Mr Trump, who ambivalently endorsed Mr Strange, caught awkwardly in the middle. Around \$20m flowed in, mostly from groups based outside the state. Mr Strange raked in nearly seven times as much as Mr Moore.

Mr Bannon backed Mr Moore, Alabama’s former chief justice and an unyielding theocrat, who was twice suspended from the bench: once for defying a federal court’s order to remove a large plaque of the Ten Commandments he had placed in the state Supreme Court’s rotunda; and again for refusing to issue marriage

licences to gay couples. He is also a showman, quoting Samuel Adams, a Founding Father, at length, waving a revolver around at his final rally and riding to the polls on horseback, wearing a ten-gallon hat. Religious conservatives love his devotion to principle. Others find him, in the words of a longtime Alabama politico, “crazier than a sprayed roach”.

Mr McConnell backed Mr Strange, a mild-mannered ex-lobbyist who served as Alabama’s attorney-general until Robert Bentley, then governor, gave him an interim appointment to Mr Sessions’s seat in February. He made much of his qualifications, accomplishments and friendship with Mr Trump. But despite this appeal to Trump voters, Mr Moore held a steady lead in the polls. Mr Strange would have made a serviceable senator, but his sunny calm proved unsuited to the times. Visits from Mr Trump and Mike Pence, the vice-president, failed to sway voters, who proved perfectly content to vote for a Trumpian candidate in defiance of Mr Trump.

In any case, Mr Trump’s endorsement was hardly full-throated: during a meandering speech on September 22nd, he said he “might have made a mistake” in backing Mr Strange, and vowed to “campaign like hell for” Mr Moore, if he won. Mr Bannon, Sebastian Gorka, Sarah Palin and even Britain’s Nigel Farage all visited Alabama to stump for Mr Moore. Mr Bannon told a big rally on September 25th that “a vote for Judge Roy Moore is a vote for Donald J. Trump...Alabama gets to show the entire world...that this populist, nationalist, conservative movement is on the rise.”

Mr Moore will face Doug Jones, the Democratic nominee, on December 12th. Mr Jones is a former federal prosecutor from a blue-collar background. He successfully convicted two Klansmen who had long escaped justice for murdering four black girls in a church bombing in 1963. Between Mr Jones’s backstory, Mr Moore’s tendency to underperform—in 2012 he eked out a narrow statewide victory as Mitt Romney, the presidential nominee, carried the state handily—and Democrats outperforming in special elections since Mr Trump’s victory, Democrats believe they have a shot. But it is a long one; Mr Moore should not be too nervous.

Congressional Republicans should be. Mr Bannon has scented blood. “Mitch McConnell,” he told the rally, “your day of reckoning is coming.” On the day Mr Moore won, Bob Corker, a moderate Republican from Tennessee, announced his retirement, probably to be replaced with someone further to the right. Jeff Flake and Dean Heller, moderate Republican senators from Arizona and Nevada, face well-funded primary challengers. Others will doubtless arise between now and next year’s elections, whomever the president endorses. Trumpism trumps Trump. ■

Counting murders

The FBI’s annual crime numbers, released on September 25th, showed a 22% rise in murders between 2014 and 2016. Is the “American carnage” Donald Trump described in his inauguration speech still increasing? Probably not. *The Economist* has crunched monthly numbers for the 50 largest cities, and so far in 2017 the murder rate is flat.



The Supreme Court's new term

Anthony Kennedy's Camelot

NEW YORK

After a year of transition, the justices confront a host of controversies

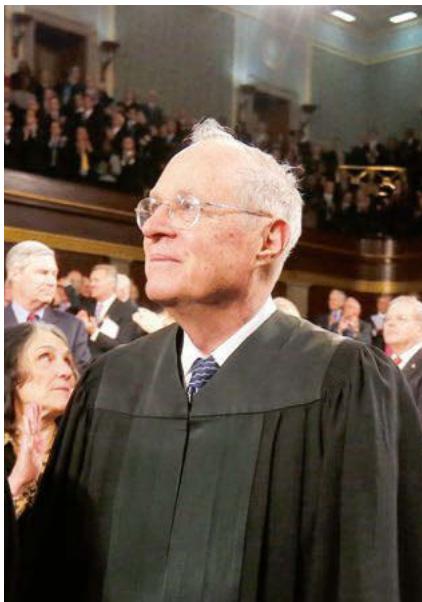
A YEAR ago the Supreme Court returned to work one judge down, as Senate Republicans refused to consider Merrick Garland, Barack Obama's nominee to replace Antonin Scalia. On October 2nd, when all nine seats are once again filled for opening day with Neil Gorsuch, Mr Trump's choice, perched in the right-most chair, the court will begin a term promising bigger cases, sharper splits and higher hopes for conservatives. How far those hopes are realised will turn on Anthony Kennedy, the longest-serving justice, who sits at the court's ideological centre.

Retirement rumours in June proved premature, but Justice Kennedy, who is 81, has told clerkship applicants he may not hire a full team for the 2018-19 term. That means perhaps one last docket of 60 or 70 cases for the 29-year veteran to decide before he hangs up his robe. The dazzling array of cases may have been too tantalising to watch from the golf course. According to Elizabeth Wydra of the Constitutional Accountability Centre, after the last, tentative term, the justices have opted to "confront a raft of controversial issues head-on."

The first case, *Epic Systems Corp v Lewis*, could tip the balance of power in the workplace away from workers and towards bosses. It asks whether companies can require new employees to agree to resolve any future workplace disputes through arbitration rather than in court. Mandatory arbitration violates New Deal labour laws, the employees say. Companies counter that the Federal Arbitration Act protects their right to steer workers away from the courtroom and to block class-action lawsuits. The ruling will affect a growing chunk of America's economy, including Uber drivers, who say they have a right to band together to challenge pay rules.

The next day, October 3rd, the Supreme Court will hear a case from Wisconsin that could transform the way America elects its legislators. The plaintiffs' target in *Gill v Whitford* is gerrymandering, the age-old scourge that allows lawmakers to choose their voters through creative drafting of electoral districts. The Supreme Court has cracked down on maps for state legislatures and for Congress that sort voters illicitly by race, but it has never curtailed purely partisan gerrymandering.

Plaintiffs say intricately contorted maps—like those drawn up using computer models after the 2010 census in Wisconsin, where Republicans make up about



Knight of the round table

half the electorate but now win nearly two-thirds of the state Assembly seats—deprive Democratic voters of equal protection and freedom of association. Gill is probably the court's last opportunity for a while to rein in the practice: when the justices last considered partisan redistricting in 2004, Justice Kennedy could not settle on a workable limit to the practice, but noted he was open to curbing gerrymandering if a viable standard could be found.

With footwork impeccable

The median justice is quite likely to hold the tie-breaking vote in *Masterpiece Cakeshop v Colorado Civil Rights Commission*, too. In an opinion in 2015, extending constitutional protections to same-sex marriage, Justice Kennedy wrote that "those who adhere to religious doctrines, may continue to advocate with utmost, sincere conviction that, by divine precepts, same-sex marriage should not be condoned," and they are protected in this mission by the First Amendment. He and his colleagues will now clarify whether this principle protects a Christian baker's right to refuse to create a wedding cake for two men.

The couple says Colorado's civil-rights law requires businesses to serve gays and straights alike, while Jack Phillips, the baker, complains that this rule forces him to endorse what he believes to be sinful behaviour and to express a message he re-

viles. If the court finds for Mr Phillips, calligraphers, florists, photographers and tailors who reject gay marriage may earn a licence to discriminate as well.

Another application of 18th-century rights to the 21st comes in *Carpenter v United States*, a case asking whether the right to privacy extends to information beamed out from mobile phones. In 2011, when Timothy Carpenter was arrested for organising a series of armed robberies, the FBI built its case on four months of mobile-phone data showing where he was when the crimes took place. This information was retrieved under a law permitting phone companies to divulge information to corroborate "specific and articulable facts" relevant to a criminal investigation. By placing Mr Carpenter within a stone's throw of the robberies based on the antennae through which he placed and received calls, the FBI was able to map his movements and convict him without ever securing a warrant from a judge. In *Carpenter*, the justices will ask whether this tactic violated the Fourth Amendment's ban on "unreasonable searches and seizures".

Other notable cases coming this autumn include a row over hundreds of thousands of Ohioans who were removed from the registered-voter rolls because they had not voted in recent elections, and a battle in New Jersey over sports betting that might lead the court to authorise some forms of gambling nationwide. The justices are also likely to take up a case revisiting a question they answered 40 years ago and neatly divided on after Justice Scalia's death in 2016: whether public-sector unions may charge a fee to non-members for the cost of negotiating their contracts. These "agency fees" preserve "labour peace", the court decided in 1977, and prevent employees from hitching a free ride on the backs of their dues-paying colleagues. If the justices strike down agency fees as a violation of workers' freedom of speech, labour unions in half the country will find themselves poorer, and less powerful at election time.

"All eyes will be on Justice Gorsuch" this term, says Ms Wydra of the Constitutional Accountability Centre, but she suggests that court-watchers should keep an eye on John Roberts, the chief justice, too. As the justices navigate these controversies, the chief justice will strive to uphold the court's "legitimacy and dedication to basic constitutional values", she says. But in the end, according to Steve Vladeck, of the University of Texas, the upcoming term will be "dominated by Justice Kennedy in every respect", and haunted by "the looming spectre of his potential retirement". Josh Blackman of the South Texas College of Law says only one outcome is certain: the swing justice, who found himself in the majority 98% of the time last term, "will continue to infuriate both sides". ■

Lexington | Winning the battle

Donald Trump's latest foray into the culture wars will bring him only short-term relief



WHEN Tommie Smith and John Carlos bowed their heads and raised their black-gloved fists during a medals ceremony at the Mexico City Olympics in 1968, they moved the world. It was only six months since Martin Luther King's murder and the race riots it sparked. The protest was also visibly supported, in a gesture of global solidarity with black Americans, by a white Australian, Peter Norman, who had finished second to Mr Smith. A memory of the humiliations suffered by Jesse Owens, America's greatest athlete, who had bested Hitler at the Berlin Olympics in 1936 then come home to segregation, lent additional force to the protest. So did the experiences of racism that Mr Smith later described: "On the track you are Tommie Smith, the fastest man in the world, but once you are in the dressing rooms you are nothing more than a dirty Negro." That contrast, between glory on the playing-field and discrimination off it, has electrified many protests by black American athletes, from Muhammad Ali to Kareem Abdul-Jabbar. They rank among America's greatest contributions to sport.

By contrast, the refusal last year of Colin Kaepernick, a quarterback with the San Francisco 49ers, to stand for pregame renditions of the national anthem, to protest against police brutality, was less effective. Even to a sympathetic audience—which a National Football League crowd is not—the fact that he, the adopted son of a middle-class white couple, had earned \$30m over the previous three seasons, made it seem too much like celebrity grandstanding. It was also unclear what action Mr Kaepernick, wearing not leather gloves but socks decorated with pigs, recommended. His view of patriotism, a complicated issue for activist sportsmen, was unclear. He at first said he could not honour the flag until it "represents what it's supposed to represent". Then he was persuaded to honour it out of respect to military veterans, by bending a knee during the anthem, instead of sitting it out.

He was subsequently left teamless, though probably not because of his kneeling. Though his protest was taken up by a few other black players, it seemed likely to fizzle. Until, on September 22nd, President Donald Trump seized upon it. "Would you love to see one of these NFL owners, when somebody disrespects our flag, to say, 'Get that son of a bitch off the field right now, out, he's fired!'" the president jeered, while campaigning in Alabama.

It was not hard to see what Mr Trump was up to. Confronted by growing evidence of disenchantment among his core supporters, especially in Republican states such as Alabama, he sought to rally them against a common enemy. Most NFL players—including almost all the flag protesters—are black and sympathetic towards Mr Kaepernick. Most of the league's fans, and almost all its owners, are white, conservative, approve of the ostentatious flag-waving displays common at American sporting events, and dislike those who would disrupt them.

The president was of course being hypocritical—few American politicians have run down America as he has. His criticism also seemed to contain a racist dog-whistle, on which Mr Trump also has form with Mr Kaepernick, though he denied race had anything to do with it. (Mr Trump also slammed the modest measures introduced to limit the brain damage players incur). It is amazing that America's president could treat his country's most painful divisions so cynically. ("He doesn't even care..." marvelling LeBron James, a basketball player.) Yet this is not new: sowing discord, with no regard for the consequences beyond how they might affect his mood and standing, is Mr Trump's compulsion and political method. And there is little reason to expect, as many Americans do, that in launching an attack on America's most popular sport this is about to fail him.

The NFL's response represented an impressive rebuke. While over 200 players "took a knee" at the next opportunity, just as Mr Trump must have hoped they would, their teammates, white and black, and also many team owners, stood over them protectively, with a supportive hand on their shoulders, or with linked arms. Along with the inevitable schmaltziness—of a sports-entertainment behemoth that fancies itself besieged—this was a strong reassertion of First Amendment rights. Even so, the president appears to have won this one. His preference for flag reverence over the freedom to protest is widely held. Opinion polls suggest most NFL fans are still against the anthem protests. Many also agree with Mr Trump that the protesters should be sacked.

A leveller playing-field

Yet there are two reasons to find hope in this farrago. One is that, even if Republicans like Mr Trump's divisive message, the polls also suggest they would prefer he focused on governing. This implies the culture war, though a strong suit for Mr Trump, will bring him diminishing returns. In a week in which his administration failed to respond adequately to Puerto Rico's devastating hurricane and his party failed in its latest attempt at health-care reform, Republican voters are starting to want more than noise.

The other cause for hope is that, if you take a longer view of America's progress, which the country's rich history of sport and protest recommends, the current drama doesn't look quite so ugly. The main reason Mr Kaepernick's protest found little purchase was that he, unlike Owens, Ali and the rest, was not a victim, and this reflects a broader truth. America's minorities have many problems, and blacks especially, from high incarceration rates to voter suppression; but white supremacy is over. Their destiny is mainly in their own hands. Indeed, they will shortly not even be a minority. By 2020 a majority of Americans under 18 will not be white. Nothing explains the current pitch of white resentment politics so starkly—and also its eventual failure. In the NFL's confident rebuke to the president it was possible to divine an augury of that future. As a sports-cultural event, it was less dramatic than that protest in Mexico City; so much the better. ■



Cuba's economy

Slim pickings

HAVANA

The communist regime can no longer rely on the generosity of its allies. It has no idea what to do

GABRIEL and Leo have little in common. Gabriel makes 576 Cuban pesos (\$23) a month as a maintenance man in a hospital. Leo runs a private company with revenues of \$20,000 a month and 11 full-time employees. But both have cause for complaint. For Gabriel it is the meagre subsistence that his salary affords. In a dimly lit *minimá* (mini-mall) in Havana he shows what a ration book entitles one person to buy per month: it includes a small bag of coffee, a half-bottle of cooking oil and five pounds of rice. The provisions cost next to nothing (rice is one cent per pound) but are not enough. Cubans have to buy extra in the "free market", where rice costs 20 times as much.

Leo (not his real name) has different gripes. Cuba does not manufacture the inputs he needs or permit enterprises like his to import them. He travels abroad two or three times a month to get them anyway. It takes six to eight hours to pack his suitcases in such a way that customs officials don't spot the clandestine goods. "You feel like you're moving cocaine," he says.

Making things easier for entrepreneurs like Leo would ultimately help people like Gabriel by encouraging the creation of better jobs, but Cuba's socialist government does not see it that way. In August it announced that it will stop issuing new licences in two dozen of the 201 trades in which private enterprise is permitted. The frozen professions include running restaurants, renting out rooms to tourists, repair-

ing electronic devices and teaching music.

This does not end Cuba's experiment with capitalism. Most of the 600,000 *cuentapropistas* (self-employed workers), including restaurateurs, hoteliers and so on, will be able to carry on as before. But the government mistrusts them. Their prosperity provokes envy among poorer Cubans. Their independent-mindedness could one day become dissent. Raúl Castro, the country's president, recently railed against "illegalities and other irregularities", including tax evasion, committed by *cuentapropistas*. He did not admit that kooky government restrictions make them inevitable. The government "fights wealth, not poverty", laments one entrepreneur.

Trump's mouth, Irma's eye

The clampdown on capitalism comes at a fraught time for Cuba. Mr Castro is due to step down as president in February. That will end nearly 60 years of autocratic rule by him and his elder brother, Fidel, who led Cuba's revolution in 1959. The next president will probably have no memory of that event. Relations with the United States, which under Barack Obama eased its economic embargo and restored diplomatic relations, have taken a nasty turn. President Donald Trump plans to make it more difficult for Americans to visit the island. Reports of mysterious "sonic attacks" on American diplomats in Havana have further raised tensions.

Hurricane Irma, which struck in early

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September, killed at least ten people, laid waste to some of Cuba's most popular beach resorts and briefly knocked out the country's entire power system. With a budget deficit expected to reach 12% of GDP this year, the government has little money to spend on reconstruction.

These are blows to an economy that was already in terrible shape. Cuba's favourite economic stratagem—extracting subsidies from left-wing allies—has had its day. Venezuela, which replaced the Soviet Union as its patron, is in even worse shape than Cuba. Their barter trade—Venezuelan oil in exchange for the services of Cuban doctors and other professionals—is shrinking. Trade between the two countries has dropped from \$8.5bn in 2012 to \$2.2bn last year. Cuba has had to buy more fuel at full price on the international market. Despite a boom in tourism, its revenues from services, including medical ones, have been declining since 2013.

Bound by a socialist straitjacket, Cuba produces little else that other countries or its own people want to buy. Farming, for example, is constrained by the absence of markets for land, machinery and other inputs, by government-set prices, which are often below the market price, and by bad transport. Cuba imports 80% of its food.

Paying for it is becoming harder. In July the economy minister, Ricardo Cabrisas, told the national assembly that the financial squeeze would reduce imports by \$1.5bn in 2017. What appears in shops often depends on which of Cuba's suppliers are willing to wait for payment. GDP shrank by 0.9% in real terms in 2016. Irma and the drop in imports condemn the economy to another bad year in 2017.

The government does not know what to do. One answer is to encourage foreign investment, but the government insists on pulling investors into a goo of bureaucracy. Multiple ministries must sign off on every ➤

transaction; officials decide such matters as how many litres of diesel will be needed for delivery trucks; investors cannot freely send profits home. Between March 2014 and November 2016 Cuba attracted \$1.3bn of foreign investment, less than a quarter of its target.

Faced with a stalled economy and the threat of shortages, the government is trying harder to woo investors. It has agreed to let food companies, for example, repatriate some of their profits. But anything more daring seems a distant prospect. *Cuentapropistas* like Leo are waiting impatiently for a planned law on small- and medium-

sized enterprises. That would allow them to incorporate and do other sorts of things that normal companies do. It will not be passed anytime soon, says Omar Everleny, a Cuban economist.

An even bigger step would be a reform of Cuba's dual-currency system, which makes state-owned firms uncompetitive, keeps salaries in the state sector at miserable levels and distorts prices throughout the economy. Cuban pesos circulate alongside "convertible pesos" (CUC), which are worth about a dollar. Although for individuals (including tourists) the exchange rate between Cuban pesos and CUC is 24 to

one, for state-owned enterprises and other public bodies it is one to one. For those entities, which account for the bulk of the economy, the Cuban peso is thus grossly overvalued. This delivers a massive subsidy to importers and punishes exporters.

A devaluation of the Cuban peso for state firms is necessary for the economy to function properly. But it would bankrupt many, throw people out of work and spark inflation. Countries attempting such a devaluation usually look for outside help. But, because of American opposition, Cuba cannot join the IMF or World Bank, among the main sources of aid. Fixing the ►

Bello | A battle over "gender ideology"

Social conservatives are fighting back against feminism and gay rights

THIS year Peru introduced a new curriculum for its primary schools as part of an effort to improve education. One of the new curriculum's principles is that boys and girls have the same right to education. It notes that "while what we consider to be 'feminine' or 'masculine' is based on biological-sexual differences, these are roles which we construct from day to day, in our interactions." And "some of those [socially assigned roles]" lead to girls dropping out of school to take on domestic chores.

To many people, this is a statement of the obvious. Yet it provided fuel for a growing campaign that holds that there is a conspiracy in Latin America, known as "gender ideology", whose aim is to feminise boys, turn girls into lesbians and destroy the family. This might come as news to many in a region notorious for machismo. Nevertheless, the campaigners are scoring victories.

In March a group called *Con Mis Hijos No Te Metas* ("don't mess with my kids") held a big march in Lima against the new curriculum and against Marilú Martens, the education minister implementing it. Last month they got their way. Ms Martens was censured by the conservative opposition majority in congress, ostensibly over her mishandling of a teachers' strike. Her replacement, Idel Vexler, favours withdrawing references to gender.

In Colombia last year Gina Parody, who is openly lesbian, similarly lost her job as education minister after her ministry had produced a manual to help schools comply with a constitutional court ruling that barred discrimination by sexual orientation. One reason why a peace agreement between the government and the FARC, a left-wing guerrilla group, was narrowly rejected in a referendum last October was because the same



campaigners objected to its use of the term "gender equity".

In Mexico opponents of President Enrique Peña Nieto's proposal to legalise gay marriage organised nationwide demonstrations last year. A campaign bus has been touring the country under the slogan of *Con Mis Hijos No Se Metan* ("no one messes with my kids"). Similar protests have taken place in Europe, for example in France and Poland.

Behind these events lies a long-standing campaign by conservatives in the Catholic church against feminism, triggered by a UN Convention against Discrimination of 1979. This campaign has widened and gained energy from opposition to gay marriage and other gay rights, a cause that appeals to evangelical Protestants as well as Catholics. "These people try to establish a moral panic and the idea that the family is dissolving, which has no basis in fact," says Maxine Molyneux, a sociologist of Latin America at University College London.

Gender is not an "ideology", but it is a lightning rod. Feminists argue that the church's representation of women—as morally superior but physically subservi-

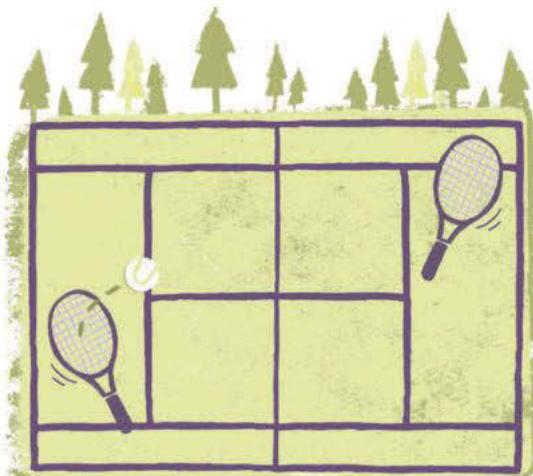
ent to the dominant male—has contributed to injustice and violence. Nevertheless, in recent decades Latin American societies have become a bit more secular, women have become less subordinated and homosexuality is more tolerated.

Whatever the church's teaching, contraception is widely used and so, perhaps surprisingly, is the "morning-after" pill. Women have far fewer children than in the past. There has been timid liberalisation of strict abortion laws in some countries. In August Chile's constitutional court upheld a law allowing terminations in the case of rape or fetal deformation, or if the mother's life is endangered. Gay marriage is legal in Argentina, Brazil, Uruguay and some parts of Mexico. On average, in 2012 Latin American women were paid only 84% as much as men with similar qualifications, but that is an increase of 12 percentage points since 1994.

These advances are incomplete and contested. Studies find that around a third of Latin American women suffer domestic or sexual violence. Murders of gays in Brazil are rising. Although many countries include sex education in the school curriculum, in practice it is often not provided. In poorer rural areas, contraception can be hard to find.

Ms Molyneux notes that a new generation of feminists have taken to the streets in countries like Argentina to denounce violence against women and to demand legal abortion. But it is the conservatives who seem to have the initiative. In a region still struggling against deep inequalities, that is worrying. As Ms Martens wrote in *El Comercio*, a newspaper, violence and discrimination against women originate "in subconscious prejudices". The way to eradicate those prejudices, she went on, is through education. That is why this battle matters so much.

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► currency system is a “precondition for further liberalisation”, says Emily Morris, an economist at University College London.

It is unlikely to happen while Cuba is in the throes of choosing a new leader. The process has sharpened struggles between reformers and conservatives within the government. Mr Trump's belligerence has probably helped the latter. Most Cuban-watchers had identified Miguel Díaz-Canel, the first vice-president and Mr Castro's probable successor, as a liberal by Cuban standards. But that was before a videotape of him addressing Communist Party members became public in August. In it, Mr Díaz-Canel accused the United States of plotting the “political and economic conquest” of Cuba and lashed out at media critical of the regime. Perhaps he was just pandering to conservatives to improve his chances to succeed Mr Castro. If those are his true opinions, that is bad news for Leo and Gabriel. ■

Rubbish in Brazil

Swipe right to recycle

SÃO PAULO

Modernising a despised but useful profession

EVERY night Gabriel Cazuza drags his two-wheeled, metal-framed *carroça* through the streets of São Paulo collecting aluminium, paper, cardboard and other recyclables for sale to scrap merchants. He is one of tens of thousands of *catadores* in Brazil's biggest city, plying a trade that has employed poor Brazilians since the 19th century. Brazil's last census, in 2010, counted 387,910 waste-pickers nationwide; that number may be too low. The work is back-breaking and unappreciated. “People don't like to see us,” says Mr Cazuza.

The developers of Cataki, an app, hope to change that. Since July it has been matching people who have rubbish with *catadores* operating in their neighbourhoods. *Catadores* cart off unwanted non-recyclables like sofas and televisions as well. On the Cataki map their *carroças* show up Uber-style as purple icons. Thiago Mundano, a street artist who is the brain behind Cataki, insists it is more like Tinder (because it takes no cut from the *catadores*). On future versions, people will post photos of their rubbish, and *catadores* will accept or reject it by swiping right or left. Photos of *catadores* will make it still more Tinder-like, Mr Mundano hopes.

Under the law, municipalities are supposed to collect and sort recyclable garbage. But São Paulo's government recycles just 300 tonnes of waste a day, while dumping 12,000 tonnes. *Catadores* collect

four-fifths of the city's recycled waste. Thanks to them, 98% of the country's empty aluminium cans are recycled (*catadores* get 2.7 reais, or 85 cents, per kilo). Still, a lot of what could be reused goes into landfill. A report in 2010 by IPEA, a think-tank, estimated that cities bury 8bn reais-worth of recyclable rubbish a year.

Some *catadores* belong to co-operatives and help city governments sort through rubbish they collect. Their trade union, the National Movement of *Catadores*, won a contract to clean stadiums during the football World Cup held in Brazil in 2014. But for most, waste-picking is solitary and dangerous work. Cars and trucks sometimes knock them down. Police often assume they are homeless drug addicts, though only a minority live on the street. In July police in São Paulo shot dead a 39-year-old *catador*, Ricardo Teixeira Santos. “It is not an isolated case,” says Mr Mundano.

He started his work with waste-pickers by adorning their *carroças*, often with political slogans. “If politicians were recyclable, they'd be worth less than cardboard,” reads one. The message on Mr Cazuza's cart is less testy: “Beautiful city. Without a *catador*, it's garbage.” Pimp My Carroça, an “artivist” collective founded by Mr Mundano, makes carts safer as well as more festive by attaching rear-view mirrors and reflective strips. Groups inspired by it have pimped more than 800 *carroças* in 13 countries, including Afghanistan and Kosovo.

Waste picking is still some way short of Silicon Valley slickness. Most *catadores* do not own smartphones, so they arrange collections by telephone. So far, just 1,000 householders and 300 *catadores* have downloaded Cataki, but Mr Mundano has plans to spread it beyond Brazil, starting in other Latin American countries. The global user base could be huge, he thinks. According to a report by the World Bank, 1% of city dwellers in developing countries work as waste-pickers. Mr Cazuza, a veteran, thinks Cataki is useful mainly to “newbies who don't know where to start”. An electronic calling card may win them more respect. ■



Cazuza, a real cool *catador*

Afro-Canadians

Where pineapples don't thrive

OTTAWA

Canada keeps a promise to descendants of black loyalists

WHEN Britain needed reinforcements to fight American revolutionaries it tried to entice enslaved blacks to join up by promising them “freedom and a farm”. More than 200 years later, the offer has come back to haunt the governments of Canada and Nova Scotia, where many black loyalists settled. In September a UN human-rights working group criticised them for failing to ensure that the loyalists' descendants have clear title to land they inherited. Despite Canada's reputation for celebrating multiculturalism and diversity, said the group's report, it is “deeply concerned by the structural racism that lies at the core of many Canadian institutions”.

Those stinging words prodded the provincial government into action. On September 27th it said it would spend C\$2.7m (\$2.2m) over two years to help descendants of black loyalists and other early settlers, including Jamaican Maroons, establish their claims in five mainly black communities, including Sunnyville and Cherry Brook. “We're turning a corner,” said Tony Ince, the provincial minister of African Nova Scotian Affairs.

The 3,000 black loyalists who followed the defeated troops north to British-held Nova Scotia were given land as promised, although their lots were often smaller and less fertile than those given to their white comrades in arms. Some “farmland” lay beneath swamps or was covered with impenetrable forest. Unlike white loyalists, most blacks did not receive legal title.

Without it, their descendants cannot sell their homes. No one knows how many there are. Some 21,000 Nova Scotians have African origin. A Nova Scotia law from 1963 was supposed to solve the problem. But black Nova Scotians say it is too complex and leaves the onus on them to pay for a land survey and legal advice. Mr Ince says the province will now cover those costs. It will also appoint two liaison officers to help homeowners deal with bureaucracy.

The blacks who stayed in Nova Scotia were a hardy lot. Not all did. Many black loyalists left to found Sierra Leone in Africa. They were joined by some Jamaican Maroons, transported from the Caribbean by the British in 1796 but soon driven away by Canada's climate. They could not thrive “where the pineapple does not”, they said. Most African Nova Scotians probably think their forebears made the better choice. If they finally get title to their land, they will believe that still more strongly. ■

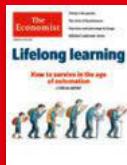
Regeneration



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Regeneration

President Emmanuel Macron's reform plans represent a turning point for his country, says Sophie Pedder. Failure would be costly not just for France but for all of Europe

SIX MONTHS AGO Sandrine Le Feur was growing leeks and raising Highland sheep on her farm in Brittany. Bruno Studer was teaching history to high-school students in Strasbourg. Bruno Bonnell was running a robotics business in Lyon. Today all three sit in the National Assembly, under the banner of La République en Marche (LREM), a political movement set up only last year by Emmanuel Macron. His election as president in May, at the age of 39, and their arrival in parliament, mark the greatest wholesale political clear-out France has seen since Charles de Gaulle established the Fifth Republic in 1958. At a shaded terrace café outside parliament in June, such first-time deputies were to be found huddling over their National Assembly welcome packs. Included among the helpful documents was a map of Paris.

As the first disenchantments with the new regime set in, it is worth recalling the remarkable events of the presidential and National Assembly elections earlier this year. No guillotines fell. No tumbrils rolled. Yet Mr Macron swept aside the old guard, rewrote the political rules and brought about a quiet revolution. A one-time investment banker and former economy minister, he had never before run for elected office. Fully 78% of today's deputies are new to this parliament. It has only 13 legislators over the age of 70; the previous one had 96.

At a time of angry populism and political nationalism the world over, there was little to hint that France, of all countries, would be the one to reaffirm unfashionable pro-European and liberal values. The country had fallen out of love with the European project it co-founded. In 2005 it rejected a draft European Union constitution in a referendum. Polls showed the French to be among the continent's most Eurosceptic people. Twice, in 2002 (with Jean-Marie Le Pen as its candidate) and again this year (with Marine Le Pen, his daughter), it voted the xenophobic and

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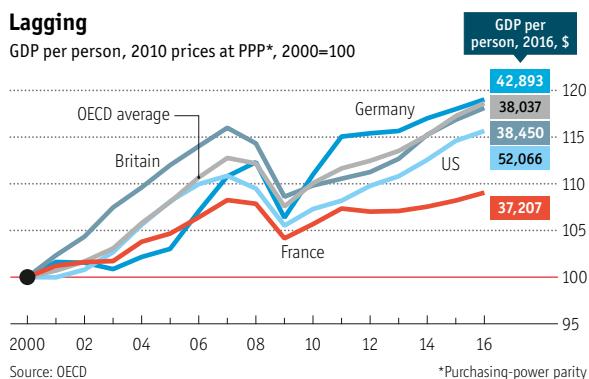
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A list of sources is at
Economist.com/specialreports

Lagging

GDP per person, 2010 prices at PPP*, 2000=100



▶ Eurosceptic National Front (FN) into a presidential run-off. France seemed to be trapped by *immobilisme*, a state of fearful conservatism shaped by self-serving political parties, entrenched interests, risk aversion and lack of confidence.

Yet this year's democratic purge suggests that, as Alain Peyrefitte, a former minister, put it in 1976, "France succeeds only by constructing enormous barriers, and then blowing them up." A highly centralised rule-bound system once served the country well, bringing fast trains to every region and three-course meals to every nursery school. But in recent decades France has piled up taxes and public debt, crushed initiative and failed to generate enough jobs, especially for the young. Between 2000 and 2016 its GDP per person consistently grew more slowly than the OECD average (see chart). Successive governments of the left and right largely failed to nudge France out of its lethargy. Book titles about "French Suicide" and "Unhappy Identity" became bestsellers. Anti-establishment politics thrived. Disillusion and despondency took hold.

Mr Macron thinks he spotted the reason. France was blocked, he judged, not because of its inclination to protest or innate resistance to change. It was because on all the pressing issues—inequality, globalisation, the environment, Europe—parties disagreed internally. "In France the political families of the left and the right, structured in the post-war era, are exhausted because of their own divisions and inconsistencies, and have no more answers to the challenges of today," he told *The Economist* this summer. His idea was not to reinvent the politics of the centre: "If it had just been centrism," he says, "I don't think we would have won." It was, rather, to force a new alignment along a different fault line: between those sympathetic to an open society and those tempted by nationalism, Euroscepticism and identity politics. So he blew up the party-political establishment.

This special report will look at France under its young president; at what can be learned from the way he won power and is starting to exercise it; and at his chances of succeeding in the huge task he has set himself. Mr Macron wants not only to remodel party politics and rebuild an "entrepreneurial and ambitious" economy that can restore France's clout in Europe. He also hopes to turn France, and Europe, into a model of how to respond to what he calls a "crisis of contemporary capitalism". By this, he means fashioning rules that encourage sustainable growth and innovation while protecting the losers from technological change and globalisation in order to minimise the risk of a populist backlash and preserve the liberal order.

The mood in France remains volatile. The first four months of the Macron presidency have veered from relief (at his defeat of

Ms Le Pen), admiration (at restored presidential dignity) and delight (at his muscular treatment of the Russian and American presidents) to wariness (at his inclination to pomposity) and apprehension (as spending cuts and labour reforms take shape). France had been morose for so long that at times it seemed to have lost faith in the possibility of renewal. Yet these things come in cycles. Mighty Germany was dismissed as the sick man of Europe back in the early 2000s, and so was Britain in the mid-1970s. At that time it was the French who were inventing the future: launching Minitel (a precursor to the internet, in 1982) and superfast trains (the TGV, in 1981), and rejuvenating Paris with modernist constructions in steel and glass.

With an economic upturn in the euro zone, the conditions for rebooting France are unusually favourable. Consumer confidence in the summer reached its highest level for ten years. Unemployment has begun to drop. "The way the world looks at us has completely changed," says one head of a firm in the CAC 40, which includes the top listed French companies. "Macron has reawakened optimism," says another. He has given the French a session of "group therapy", commented Michel Houellebecq, a novelist known for his nihilism. If Mr Macron gets it right, France could, just possibly, be at the start of a new cycle.

Caution is nonetheless in order. Recent French history is littered with unkept political promises. Mr Hollande, a Socialist, vowed "to re-enchant the French dream"; Nicolas Sarkozy, his centre-right predecessor, a "rupture" with bad habits; and Jacques Chirac, a Gaullist, to "mend the social fracture". The dream faded, the rupture never happened, and the social fracture still runs deep. After his first 100 days Mr Macron's own approval rating had fallen to just 36%, the lowest of any modern French president at this point

After his first 100 days Mr Macron's own approval rating had fallen to just 36%, the lowest of any modern French president at this point

French president at this point. His opponents mock his deputies' "amateurism" and accuse him of harbouring "a preference for the rich". Even friends worry that Mr Macron lacks an inner circle of political heavyweights. However charismatic, he cannot do it all himself. The forces that helped put him in the presidency—disillusion with elites, dejection at joblessness—could yet turn against him. The stakes are high, for France and Europe. If Mr Macron fails, in five years' time voters may not give a liberal democrat a second chance.

The start of something big

On successive Saturday mornings in the autumn of 2015, the lift to a young government minister's private apartment was in constant use. In secret meetings, plans were hatched to start something, although none of the participants knew quite what. "A club for reflection", recalls one; an "appeal for action", says another. What they shared with Mr Macron, the minister in question, was a frustrated sense that there was a hidden majority in favour of reforms, but no way to unlock it. Six months later Mr Macron launched En Marche! (On the Move!). The following year he—along with two young members of that original group—stepped into the Elysée Palace.

Mr Macron owed his improbable victory in part to France's two-round electoral system, as well as to political luck. But he also read the mood, created his own chances and exploited them. At its launch, En Marche! was dismissed as a quaint distraction by party barons among whose political families (under various names) power had rotated since 1958. It had no money, ►

Marchons, marchons

France, National Assembly, seats per parliamentary group



Sources: Assemblée Nationale; French interior ministry

► no members and no deputies. Yet Mr Macron “found enough people who were sufficiently mad, or lucid, to back him”, recalls one. By refusing to define his party as on the left or the right, he drew in those turned off by doctrinaire politics. By setting it up as a “citizens’ movement”, with semi-autonomous local committees, he secured grassroots backing for his political assault.

Today such local organisers sit dutifully, if at times awkwardly, on the red benches of the National Assembly. Opposition is muted. The Socialists have lost nearly 90% of their seats and are struggling to survive. The Republicans have been stripped of most of their moderates and are lurching to the right. The FN boasts eight deputies but is straining to be heard. The most audible voice may well come from the far left, under Jean-Luc Mélenchon. It accuses LRM deputies of unthinking fealty to Mr Macron (although this will itself be tested, especially when novice politicians face angry constituents once reforms get going and spending cuts bite). Indeed, the fiery Mr Mélenchon vows to keep “one foot in the street”, so opposition may well be as decisive outside parliament as discontent is vented through public protests and demonstrations. “All revolutions are followed by counter-revolutions,” cautions Dominique Reynié, a political scientist. Mr Macron, after all, secured only 24% of the first-round vote. Twice as many votes went to anti-system candidates of the far left or the far right. His victory was greeted with relief and surprise, not jubilation. Distrust still simmers.

How Mr Macron manages resistance will determine his prospects. Ask what he will do, and he simply says: “hold firm”. He kept his nerve over labour reform, having laid out his plans during the campaign and secured a mandate and parliamentary majority to carry them out. He has built further legitimacy with a post-partisan government, stealing his prime minister, Edouard Philippe, and his finance minister, Bruno Le Maire, from the centre-right. If he campaigned with charm, he seems ready to govern with steel. In July he sent a brutal message about political authority to his top general, who had criticised defence cuts; the general resigned. If anything, Mr Macron has an imperial concept of French power and a distinct taste for its symbols, hosting foreign leaders in Versailles one day and riding in a nuclear submarine another. He has called this model “Jupiterian”, a reference to the ancient Roman king of the gods. His opponents dub him, rather, the “Sun King”. Even well-wishers worry about hubris.

Just do it

Yet the unflappable philosophy graduate who now occupies the ornate first-floor office in the Elysée, just below where he once worked as an adviser to Mr Hollande, seems undaunted by the task, and seized by a sense of historic responsibility. “The biggest risk for the next five years is not to get things done,” he says. In the short run Mr Macron may draw flak for unpopular reforms and grandiose tendencies. Yet his determination to do his own thing, even marry a woman 24 years his senior, suggests an im-

perviousness to criticism that could help him endure disapproval in the polls. The president certainly seems untroubled by self-doubt. “He always knew he had a special destiny,” says a childhood friend. Mr Macron is also shrewd enough to learn from his mistakes. Under Mr Hollande, he saw from the inside how to make them. In the long run his Gaullist reading of institutions, whereby the president concentrates on the grand scheme of things while his prime minister deals with day-to-day affairs, could serve to protect him.

Inflated political expectations often lead to excessive disappointments. One clear-eyed Macron adviser warns of the “Obama syndrome”. Voters in Europe also know about investing impossibly high hopes in young leaders (Britain’s Tony Blair, Italy’s Matteo Renzi). Mr Macron’s unexpected victory, and his first months in office, reveal qualities that should help him navigate tougher times. He has the ability to think ahead and to seize opportunities; determination bordering on ruthlessness; and a gift for embodying a hopeful optimism that has long eluded France. But in the end he will be judged mainly by one thing: whether he can put the economy back on track. ■

Business

Into gear

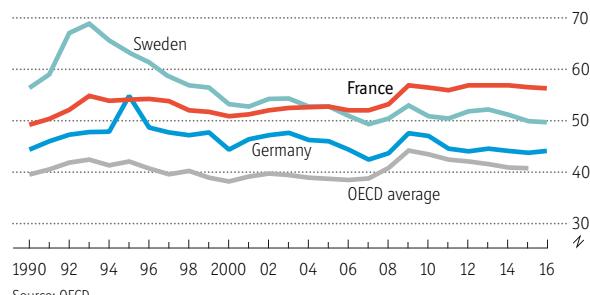
France is well placed to benefit from the knowledge economy

THE WORD “FACTORY” does not do justice to Bugatti’s state-of-the-art production site in the shadow of the forest-clad Vosges mountains in eastern France. There is no grease or grime around the assembly line. The floor is a shimmering white gloss. The airy space feels more like a museum of modern art, gleaming eight-litre engines displayed like so many design exhibits. Workers wear white gloves, as if handling treasures. In fact, they are building the world’s fastest supercar.

A Milanese engineer, Ettore Bugatti, founded a car factory in this corner of France in 1909. Germany’s Volkswagen, which later bought the brand, chose Bugatti’s historic French site to develop the Veyron, a car designed to combine elegance and speed. The French factory turned out every one of these luxury record-breaking cars after their launch in 2005. This year Bugatti unveiled a successor, the Chiron, which pushes the limits of physics and sleek design further still. The car reaches 100km (62 miles) an

The new stats

Public spending as % of GDP



Source: OECD

► hour in two-and-a-half seconds and has a starting price of €2.4m. Christophe Piochon, head of the French plant, compares the exquisite craftsmanship that goes into the construction of a Bugatti car to haute couture.

Although France has a reputation for making life difficult for business and struggles to hold on to low-end industries and jobs, it is in some ways well placed to carve out a competitive niche in the knowledge economy—if it can get its mix of taxes and business regulation right. As the Bugatti factory suggests, the country has strong traditions in both luxury and creative industries, as well as in engineering. It boasts excellent research in maths and has a number of outstanding business and engineering schools.

Moreover, something has begun to stir in corporate France, as the car industry illustrates more broadly. In the past, French car designers had a reputation for a certain cool. When Citroën launched the futuristic DS “Goddess” in 1955, Roland Barthes, a French structuralist, described it as “spiritual”. Now, after years of turning out dull vehicles and focusing on cost-cutting by shifting production to cheaper countries, French carmakers are back on form. PSA has just bought General Motors’ European operations. Renault has launched the Alpine sports car, a retro nod to its 1960s classic, which is being built in the French port of Dieppe. The Renault-Nissan alliance took an early bet on electric vehicles. By this year it had become the biggest carmaker in the world. “A few years ago the motor industry was said to be the steel of the 21st century, but today there’s an incredible effervescence in the sector,” comments Jacques Aschenbroich, head of Valeo, which makes high-tech automotive parts, such as sensors for driverless cars. Half of Valeo’s current orders are for products that did not exist three years ago.

Like Valeo, other giants of the CAC 40, which provide the world with tyres (Michelin), shampoo (L’Oréal), lipstick (Chanel), yogurt (Danone), intelligence systems (Thales) and handbags (Louis Vuitton), have long been globalised. France has more firms than Germany in the *Fortune* 500. But a tangle of rules for mid-sized firms deters small ones from expanding. France has less than half as many mid-sized companies as Germany, and half as many firms that export. Too few invest in digitisation. Last year’s World Economic Forum competitiveness index ranked France 21st overall, out of 138 countries, but only 33rd for firms’ adoption of technology.

Enterprise à la française

Startups provide a good example of how better incentives, and fewer burdens, could release French growth. High taxes on stock options and bureaucratic rules used to make France a difficult place for them. But the boost Mr Macron gave the sector when he was minister helped bring about a cultural shift. Venture-capital investment in France has increased sharply since 2014, and last year was higher than in Germany. France “used not to celebrate success”, says Frédéric Court, a London-based venture capitalist, but he is now bullish about the country. Xavier Niel, a billionaire entrepreneur and godfather to tech startups, describes a “new alchemy” in France.

The country has particular potential in sectors set for rapid growth, notably machine learning, artificial intelligence (AI) and big data. Two years ago Facebook set up its only European research lab into AI in Paris because of the research going on in France, says Antoine Bordes, who runs it. Young French graduates are increasingly trying their luck with startups. Hugo Mercier, a 25-year-old engineering graduate, shunned corporate life to launch Dreem, a headband that uses promising neurotechnology to improve deep sleep. Another, Frédéric Mazzella, founded BlaBlaCar, a ride-sharing startup now valued at about €1.4bn.



Fashion designer

This summer Mr Niel opened Station F, the world’s biggest incubator in eastern Paris, designed to attract international talent. “Within five years”, claims Mr Niel with his customary flourish, “France will be the top country in Europe for startups.”

“There is every reason in the medium run for economic growth in France to match or exceed the average in the euro zone,” says François Villeroy de Galhau, the governor of the central bank. If growth in the French economy were to reach this average, combined with labour-market reforms, the effect on unemployment could be “spectacular”, he says. France also benefits from strong demographics, dynamic regional cities, excellent infrastructure, a first-class health system and good public services. The two main brakes on growth are well documented: an overly large public sector and a rigid labour market. Public spending accounts for 56% of GDP, the highest level in the OECD (see chart, previous page), requiring higher taxation than in any other OECD country bar Denmark, without generating more growth in return. The rigid labour market discourages firms from creating permanent jobs, and hiring young (and older) people. French unemployment, at 9.8%, is at twice the German level; for the under-25s it reaches 23%. The 3,500-page labour code offers little flexibility, so firms use temporary contracts, often for less than a month, which now account for over four-fifths of new contracts (see chart, next page).

Mr Macron spent a lot of time hanging out with tech types when he was economy minister and has a good grasp of what is needed. He plans to reduce the corporate tax rate from 33% to 25% over five years, and ease the payroll burden by transferring some social charges to a more broad-based tax. He wants to encourage investment in the productive economy by transforming the annual personal-wealth tax into a property tax, and to put a flat tax on financial income. By 2022 he plans to have curbed the share of ►

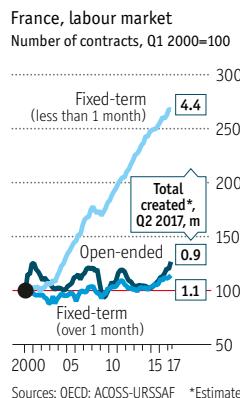
► GDP consumed by public spending to 52% and to have sold off a chunk of state holdings. "Our guiding principle is to create an environment in which companies can succeed," says Mr Le Maire, his centre-right finance minister. In this respect, the labour reform, agreed on earlier this month, is crucial. It will give companies more freedom to negotiate at enterprise level and reduce the financial risk of wrongful dismissals, a deterrent to hiring permanent staff.

Further reforms draw on the insight that France needs to adapt its system of rules and safeguards, designed in the post-war years to protect jobs, to focus on protecting individuals instead. "We need a state that says: I'm not going to lead your life for you, I'm not there to replace what you do. Some will do well, others less so. But I will protect you from the great accidents of life and I will help give you the capacity to succeed," says Mr Macron. The government intends, for example, to replace the spaghetti soup of 35 different pension regimes with a universal system, based on individual points-based accounts, so as to encourage job mobility. It wants to put more of the €32bn state-mandated budget for training in the hands of individuals, using personal credits; currently, 62% of the budget is spent on those who already have jobs and only 14% on the unemployed.

These are ambitious projects. Unifying France's pension system could take ten years, and public-spending cuts will be contested. If the government achieves its aim of curbing the budget deficit to 2.9% this year, that will be the first time in ten years that it has dipped below 3%. What makes Mr Macron's proposed reforms more promising than past efforts is their transparency. Plans to change pensions in 1995 and to introduce a flexible work contract for the young in 2006 had not been flagged up in the preceding election campaigns, and were roundly defeated by the street. Mr Macron, by contrast, spelled out his reforms and secured a mandate for them. He has put a mix of specialists and career politicians in government to implement them. He has also been careful to maintain a dialogue with interested parties. Muriel Pénicaud, his labour minister, held about 50 meetings with unions and bosses this summer. They seem to have found a constructive partner in the Confédération Française Démocratique du Travail (CFDT), a moderate union, which has overtaken the hardline Confédération Générale du Travail (CGT) in the private sector for the first time since it was founded in 1895. "The French elected the president because they wanted something new," says Laurent Berger, the head of the CFDT. "I'm convinced they want that novelty elsewhere too, including from unions."

It would be remarkable if the country were able to shift to a less theatrical form of conflict resolution. Confrontation and street drama still retain a romantic hold on the collective imagination. Mr Macron's plans could yet go wrong. Some of his opponents, who portray him as unforgivably pro-business, will seek conflict for political ends. A web of public-sector industrial interests will resist disruption, too. Mr Macron is not looking for a show of force, but he seems ready to engage in one if need be. If he can break with his predecessors' habits, manage reform wisely and put in place the basis for a more sustainable upturn, the French economy may at last realise its promise. ■

In a fix



Education

The tyranny of normal

One kind of education does not fit all

THE MOST STARTLING feature of Sandy Sablon's classroom at the Oran-Constantine primary school, on the outskirts of the northern port of Calais, is the collection of old tennis balls that she has wedged on to the legs of all the little chairs. The teacher spent a weekend gashing and fitting the lime-green balls in order to cut down noise. This became a problem when she introduced new teaching methods. Out went desks in rows. Instead, she grouped children of a similar level of achievement around shared tables, which meant pupils got up and moved about much more.

All the strains of post-industrial France crowd into Fort Nieuvelay, the Calais neighbourhood surrounding the school. Red-brick terraced houses, built for the families of dockers and industrial workers in the 1950s, jut up against rain-streaked tower blocks. On the estate, the Friterie-Snack Bar is open for chips, but other shop fronts are boarded up. The children's swings are broken. Sophie Paque, the primary's energetic head, says a staggering 89% of her pupils live below the poverty line. "We give them a structure they don't have at home." Youth unemployment in Calais is over 45%, twice the national average. In Fort Nieuvelay it touches 67%.

This autumn Oran-Constantine, like 2,500 other priority classes nationwide, is benefiting from Mr Macron's promise to halve class sizes to 12 pupils for five- and six-year-olds. The new policy caused a certain amount of chaos elsewhere, but Oran-Constantine was ready. It had already been part of a pilot scheme launched in 2011, with smaller class sizes for rigorous new reading sessions and more personalised learning. This was put in place under an education official, Jean-Michel Blanquer, who is now Mr Macron's education minister. Faster learners use voice-recognition software on tablet computers, freeing up their teacher to help weaker classmates. "French teachers tend to advance like steamrollers: straight ahead at the same speed," says Christophe Gomes, from Agir pour l'Ecole, the partly privately financed association that ran the government-backed pilot scheme; here "pupils set the pace." Some teachers feared that technology was threatening their jobs, but found instead that it allowed them to do their jobs better. One year into the experiment, the number of pupils with reading difficulties at the 11 schools in Calais that took part had halved.

Such techniques may not seem controversial elsewhere, but in France they challenge central educational tenets. For many years, education has been subject to what might be called "the tyranny of normal". Ever since Jules Ferry introduced compulsory, free, secular primary education in the 1880s, uniform schooling countrywide has been part of the French way of doing things. The 19th-century *instituteur*, or schoolteacher, was a missionary figure, a guarantor of republican equality and norms. Teachers were trained in *écoles normales*. To this day, the mighty education ministry sets standardised curriculums and timetables. All 11-year-olds spend exactly four-and-a-half hours on maths a week. Experimentation is frequently regarded as suspect. "Classes are not laboratories," noted a report by the conservative education inspectorate a few years ago, "and pupils are not guinea pigs." ■

Yet “in reality our standardising system is unequal,” says Mr Blanquer. By the age of 15, 40% of French pupils from poorer backgrounds are “in difficulty”, a figure six percentage points above the OECD average. French schools, with their demanding academic content and testing, do well by the brightest children, but often fail those at the bottom. France is an “outlier”, says Eric Charbonnier, an OECD education specialist, because in contrast to most countries, inequality in education has actually increased over the past decade. Trouble starts in the first year of primary school, when children move abruptly from finger-painting in maternelle (nursery) to sitting in rows learning to read and write. Weaker pupils quickly get left behind and find it hard to catch up.

Mr Macron and Mr Blanquer have put reform of primary education at the centre of their policy to combat school failure and improve life chances. Halving class sizes is just the start. Mr Blanquer, a former director of Essec, a highly regarded business school, has thought about what works abroad and how such lessons might be applied in France. He is keen on autonomy and experimentation, which puts the teaching profession on edge. French education has long been run along almost military lines. An army of 880,000 teachers is deployed to schools across the country. Head teachers have no say in staffing. In the course of their careers, teachers acquire points that enable them to request reassignment. Newly qualified ones without such points are sent to the toughest schools, and turnover in such places is depressingly high.

During the election campaign Mr Macron promised to give schools more autonomy over teaching methods, timetabling and recruitment, and to stop newly qualified teachers from being sent to the toughest schools. Yet greater freedom for schools to experiment will require a big change in thinking. Only just over 20% of French teachers adjust their methods to individual ability, compared with over 65% of those in Norway.

At the other end of the education ladder, a hint of just how creative independent French education can be is found inside a boxy building on the inner edge of northern Paris. This is 42, a

coding school. It is named after the number that is the “answer to the ultimate question of life, the universe and everything”, according to Douglas Adams’s science-fiction classic, “The Hitch-hiker’s Guide to the Galaxy”. The entrance hall at 42 is all distressed concrete and exposed piping. There is a skateboard rack and a painting of a man urinating against a graffiti-sprayed wall.

Metaphysics and meritocracy

42 is everything that traditional French higher education is not. It is entirely privately financed by Mr Niel, the entrepreneur, but free to pupils. It holds no classes, has no fixed terms or timetables and does not issue formal diplomas. All learning is done through tasks on screen, at students’ own pace; “graduates” are often snapped up by employers before they finish. There are no lectures, and the building is open round the clock. The school is hyper-selective and has a dropout rate of 5%. When it opened in 2013, *Le Monde*, a newspaper, described it as “strange”. “We’re not about the transmission of knowledge,” says Nicolas Sadirac, the director. “We are co-inventing computer science.” He likes to call 42 an art school.

On a weekday morning Guillaume Aly politely takes off his headphones to answer questions as he arrives at 42. He was in the army for eight years before he applied, and went to school in Seine-Saint-Denis, a nearby banlieue, or outer suburb, where joblessness is well above the national average. “I’m 30 years old, and you don’t have much hope of training at my age,” he says. But 42 shows a deliberate disregard for social background or exam results. It tests applicants anonymously online, then selects from a shortlist after a month-long immersion. Each year 50,000-60,000 people apply and just 900 are admitted. Léonard Aymard, originally from Annecy, was a tour guide when he applied. Loïc Shety, from Dijon, won a place even though he lacked the school-leaving *baccalauréat* certificate. “It’s not for everyone,” says Mathilde Allard from Montpellier, “but we work together so we don’t get lost.”

Across the river Seine, on the capital’s chic left bank, the University of Paris-Descartes is a world away from 42. It is based in a late-18th-century building. Home to one of the most prestigious medical schools in France, it is highly sought after by the capital’s brightest, and is a world-class centre of research in medical and life sciences. Yet a glimpse at Descartes also shows how French higher education can tie the hands of innovators, including the university’s president, Frédéric Dardel, a molecular biologist.

Like universities the world over, Descartes receives far more applications than it has places available. Yet unlike university heads in other countries, Mr Dardel is not permitted to select undergraduate students. Ever since Napoleon set up the *baccalauréat*, which is awarded by the education ministry, this exam has served not so much as a school-leaving diploma but as an entrance ticket to university, where tuition fees are negligible. Students can apply for any course they like, regardless of their ability. A centralised system allocates Mr Dardel’s students to his institution. This routinely overfills certain courses and causes overflowing lecture halls. When a university cannot take any more, those at schools nearby are sup-

The challenge is to persuade public opinion, students, parents and teachers that variety, autonomy and experimentation are not a threat to equality



posed to be given priority, but such is the demand that places are increasingly being allocated through random selection by computer, known as *tirage au sort*, which this year affected 169 degree subjects across France. Ability is immaterial. "It's an absurd distribution system which leads to failure," says Mr Dardel. He calculates that the average dropout rate at Descartes over the past six years has been 45%.

Not all universities can be like 42. Mr Dardel admires the coding school but argues that there is still a place for theoretical maths in computer science. In year three, the computing degree at Descartes still puts a heavy emphasis on mathematical theory. Without the right to select those who attend, too many students fail, breeding disillusion and waste. In 2014, 81 of the 268 students allocated to the maths and computing course at Descartes did not have the bac "s", the maths-heavy version of the school-leaving exam. After the first year as undergraduates, only two of those 81 passed their exams.

"We have a tendency in France to think you need a single solution for everyone," says Mr Sadirac at 42. The lessons of his school, as well as of Descartes and Oran-Constantine, point a way for France to overcome the tyranny of normal in order to make more of what it does well and minimise what it does not. There is plenty of thinking about how to break free from standardisation and make teaching more individualised without losing excellence. France's own world-class *grandes écoles*, its business and engineering colleges, which do well in international rankings, are highly selective, but they serve only about 8% of the student population. The challenge is to persuade public opinion, students, parents and teachers that variety, autonomy and experimentation are not a threat to equality but a means of restoring it to an education system that has lost sight of it. If Mr Macron can do this, he will have gone a long way towards improving the lot of people in places like the Calais housing estates whom the system currently fails. ■

The regions

Double fracture

From vibrant cities to toxic banlieues and rural deserts

"IT'S SIMPLE UNTIL you make it complicated", reads a poster pinned to the wall of the hangout room. Purple and green cushions on the sofa are printed with other injunctions, such as "Less meeting, more doing". There are deckchairs, coffee machines, a figure of Yoda from "Star Wars" and other must-have accessories of the startup office. The main concession to local culture, says Jérôme Vuillemot, a tech entrepreneur in Lyon, is a table-football game, a staple of the French café. In 2013 he co-founded Vidcoin, which uses zero-latency technology to allow advertising videos on mobile screens to launch instantly. Today the Lyon firm employs 20 people and has 75m users a month worldwide. Its biggest market is America.

Lyon is a thriving, cosmopolitan regional city that feels at ease with change. Between 2008 and 2015, a period when unemployment rose across the country, the net number of jobs there increased by 5%. It enjoys fast trains and slow food, and got a bike-sharing scheme long before Paris or London. Perched at the confluence of the Rhône and the Saône is a futuristic new plate-glass museum. Along the quay an experimental driverless bus

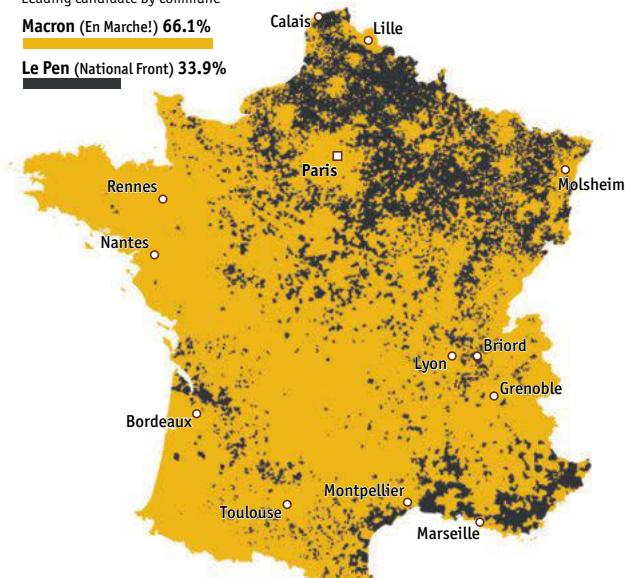
Centre forward

French presidential election 2017, second-round results

Leading candidate by commune

Macron (En Marche!) 66.1%

Le Pen (National Front) 33.9%



Source: French interior ministry

conveys passengers to and fro. A startup incubator is being fitted in an old boiler factory.

As many as 84% of Lyon's voters backed Mr Macron for president. The city's affinity with him is not coincidental. In many ways it is a laboratory for his politics. Gérard Collomb, its mayor from 2001 until he became interior minister in May, was one of Mr Macron's earliest supporters. He ran the city by building a majority across the political divide, showing that this was possible well before LR was launched. "We've done this for a long time and it feels quite normal here," says David Kimelfeld, who replaced Mr Collomb as mayor of Greater Lyon. Mr Collomb, a Socialist, is also unapologetic about backing business. The city retains a heavy industrial base, but has built new strengths in robotics, life sciences and clean tech. "Lyon used to feel like a provincial town," says Mr Bonnell, founder of a local robotics firm and one of Mr Macron's new deputies. "Now it could become France's Shanghai."

Lyon's breezy confidence is echoed in a string of other French regional cities, including Lille, Grenoble, Montpellier, Toulouse, Rennes, Nantes and Bordeaux, the last of which is now only two hours from Paris by TGV. These metropolitan centres, criss-crossed by shiny trams and well supplied with smoothie bars and co-working spaces, are the new urban face of a country whose geography was famously summed up as "Paris and the French Desert", the title of a book by Jean-François Gravier published in 1947. In the second-round presidential vote Mr Macron scored a massive 90% in Paris, 88% in Rennes and 86% in Bordeaux. Such places are at ease with his business-friendly globalism. Another side of France is not.

On the front line

Travel 10km (six miles) east of Lyon, to Décines-Charpieu, home to the brand-new Groupama stadium for the Olympique Lyonnais football club, and Mr Macron's second-round majority begins to taper off. Continue for another 10km, beyond the city's airport to the town of Colombier-Saugnieu, and it disappears. Here, Ms Le Pen secured 57% of the vote. Carry on up over the ►



Hoods up in the Lyon 'hood

► Crémieu plateau, which looks out towards the Alps, and down to the village of Briord, with its single main road, café-bar-tabac and car mechanic, and you reach deep Le Pen country. She came top in first-round voting in the surrounding department of l'Ain. In the run-off, 61% of Briord's voters backed her for president.

Ms Le Pen's territory is the France of anxiety and neglect. For decades, her party's support base has relied on two strongholds: the Mediterranean fringe (its traditional base), and the industrial rustbelt of the north and east, both areas with historically high levels of immigration and unemployment. Ms Le Pen's vote correlates closely with measures of social distress, notably joblessness and lack of qualifications. In the presidential first round 37% of working-class voters backed Ms Le Pen, 24% Mr Mélenchon and just 16% Mr Macron.

The most startling change since 2011, when Ms Le Pen took over the party her father founded in 1972, has been the FN's push into small rural communities, notes Hervé Le Bras, a geographer. In 1995 the FN secured its highest scores in inner suburbs 20-30km from the centre of big cities. Now that spot has shifted to 40-50km away, where pavements give way to farmland. An analysis by Mr Le Bras and Jérôme Fourquet, a pollster, shows that the FN vote is closely associated with the absence of services such as a pharmacy, bakery, post office or café. This "France of the forgotten" was zealously courted by Ms Le Pen, who played a classic populist hand, appealing to ordinary people's sense that the elite was neglecting them, and promising to evict the establishment "in the name of the people", her campaign slogan. She held more rallies in villages than she did in big cities.

Mr Macron may have defeated Ms Le Pen, but the reasons for the FN's surge have not disappeared. Some 10.6m French voters backed her in the second round, nearly twice as many as supported her father in 2002. Mr Macron's liberal internationalism does not speak to such places, and public policy offers few remedies. The best of them focus on *désenclavement*, or breaking the sense of isolation, by improving public services such as bus links, family doctors and high-speed broadband coverage in such areas. But these are flimsy counter-forces to populism.

Across the tracks

Like all big French cities, Lyon is suffering from a second fracture. Beyond the city's ring road lies Vaulx-en-Velin, an angular *banlieue* originally built to house people recruited from north Africa, Spain and Portugal for the textile industry and public works. Vaulx-en-Velin became nationally known for riots there in 1990. Since then, huge sums have been pumped into renovating the place. Brutalist tower blocks were demolished, young trees were planted and park benches put in. Huge, brightly col-

oured plant pots were installed in front of one concrete parade of shops, where men gather at shaded tables outside a kebab restaurant. Unemployment in Vaulx-en-Velin, at 20%, is still twice the national average. Nearly two in five adults have no school-leaving certificate. In the first round of the presidential election, the far-left Mr Mélenchon came top there. The abstention rate was nearly twice the national average.

Such intractable problems, powerfully captured over the years by French films from Mathieu Kassovitz's angry "La Haine" (1995) to Céline Sciamma's tender "Bande de Filles" (2014), require an urgent policy response. Mr Macron's labour reform may help if more firms create stable entry-level jobs, particularly for the young. Smaller primary classes in such areas will improve schools in the long run. Mr Macron's planned overhaul of the inefficient training system could also help (France offers only half as many apprenticeships as Germany). Some also see enterprise as a way out. "Digital can be a tool to overcome discrimination," says Mourir Mahjoubi, a former entrepreneur and now digital minister, explaining that the trouble he had getting a job helped persuade him to launch his own startup.

There are other reasons for worrying about the toxic mix found in France's *banlieues*. "They represent a collective failure," says Amine El-Khatmi, a deputy mayor in Avignon, "because we are losing a generation." He notes a growing discourse of victimisation in certain quarters among French-born children of immigrants who are rejecting France. This is the sort of message, argues Gilles Kepel, a scholar of Islam, that is used by jihadists to recruit on French soil. Home to some 5m Muslims, France has supplied more such fighters to Syria and Iraq than any other European country, and has been more battered by terrorist attacks since 2015.

Such matters are politically delicate in France, partly because they challenge its strict version of secularism known as *laïcité*. Entrenched by law in 1905 after a prolonged anticlerical struggle, this creed keeps religion in all its forms out of public affairs. Some mayors used it to ban the "burkini", a body-covering swimsuit, before being overruled in the courts. Yet some campaigners for women's rights also argue that *laïcité* is not being enforced in ways that protect their freedom. "The growing number of veiled women reflects the investment of Islamists," Nadia Ould-Kaci, of Women of Aubervilliers against the Veil, told the Senate recently. She says that in some neighbourhoods women are not welcome in certain cafés, and eating out during Ramadan has become "very dangerous". Behind such conservative pressure, researchers see the hand of well-organised Salafist movements. David Thomson, the author of the most comprehensive study of French jihadists who returned home after going abroad to fight, says that many of his subjects were drawn first to the Salafist doctrine of rupture with French society.

This is a daunting problem. The Catholic University of Lyon offers a government-backed diploma in religious freedom and secularism in French, designed especially for imams from abroad, but not enough people sign up. Over mint tea at the Othmane mosque, near Vaulx-en-Velin, Azzedine Gaci, its imam and a local pioneer of inter-religious dialogue who also teaches part of this course, says that mosques find it difficult to reach teenagers at an age when they are asking searching questions about being Muslim in France.

The government's attempts have fared little better. France's experiments with deradicalisation have been disappointing, notably in its prisons. Pre-emptive intelligence is considered a far better tool. French security services frequently foil home-grown terrorist plots. Mr Macron has set up a new counter-terrorism co-ordinating committee, reporting directly to him. But France, like other European countries, is up against big numbers, small and ►

► shifting cells, and low-tech operations such as knife attacks and the use of vehicles to mow down pedestrians. They are all but impossible to prevent. The French intelligence services' terrorism watch list contains 12,000 people.

In the long run Mr Macron's labour and education reforms could help to combat exclusion in the *banlieues*, but that will take time. Faster-acting schemes might include a promise to introduce a month's compulsory military service to encourage a sense of national belonging. Mr Macron's central short-term proposal is a new counter-terrorism bill to bring an end to France's state of emergency in November, two years after it was first declared.

Lyon's double fracture is a reminder that, for all the optimism Mr Macron's victory has rekindled in metropolitan folk, the threat of populism, and the dark fascination with political Islam, both remain potent. Each will continue, in its own way, to lure some of those who have been angered, disillusioned or repelled by liberal Western society. And both raise intractable policy challenges. As Mr Thomson says of radicalisation: "The reality is that nobody knows how to solve the problem." ■

France in Europe

A certain idea

That crucial Franco-German axis

"IN EVERY BEGINNING dwells a certain magic." Germany's Angela Merkel quoted these lines from a poem by Hermann Hesse when she welcomed Mr Macron to Berlin the day after his inauguration. The doyenne of European leaders, she was by then on her fourth French president, having worked first with Mr Chirac in 2005. The link with her second, Mr Sarkozy, was volatile; with Mr Hollande, lopsided. The election of Mr Macron, who praised Germany for "rescuing our collective dignity" during the refugee crisis and whose supporters waved EU flags at rallies, came as a relief and a source of promise.

In his first three months Mr Macron met Ms Merkel nine times, more than twice as often as America's and Italy's leaders, and three times more than Russia's and Britain's. This reflects a return to the traditional European reflex of French presidents during the Fifth Republic. It was General de Gaulle and Konrad Adenauer, his German counterpart, who established the Franco-German link as the driving force of Europe when they met in 1963 to sign a treaty under the crystal chandeliers of the Elysée Palace. "My heart overflows and my soul is grateful," averred the general, adding that the treaty "opens the door to a new future for Germany, for France, for Europe and therefore for the world".

Mr Macron would probably echo that sentiment. He twice took his election campaign to Germany. His finance minister is a fluent German-speaker. His prime minister was educated at the French Lycée in Bonn. His diplomatic adviser, Philippe Etienne, was formerly ambassador to Berlin. Whatever the question in Europe, the first answer for Mr Macron seems to be Germany.

It is clear what Mr Macron seeks from the "new deal" he hopes to reach with his neighbour. He summed it up three years ago: "€50bn of spending cuts for us; €50bn of investment for them." A fuller version goes something like this: France restores its lost credibility in German eyes by sticking to its promises to curb the budget deficit and reform the economy; in return, Germany supports closer integration of the 19-member euro zone,

with more fiscal convergence and joint investment, some form of common budget, a finance minister and a parliament.

Mr Macron's first step is to keep to his word at home. "He will surprise them, because the Germans don't believe it will happen," says an adviser. "They have been disappointed by France too many times before." It will take some time before judgment in Berlin firms up and the new German government settles. But once they start talking seriously, the hard part will begin. A foretaste was provided by the cover of *Der Spiegel*, a German weekly, just days after the French election. It featured Mr Macron under the heading "Teurer Freund"—which can mean either dear or expensive friend. When France talks about more risk-sharing, Germany hears bigger bills to pay. When Germany insists on more control and rules, France hears refusal to accept solidarity. As a frequent visitor, Mr Macron knew Germany well enough not to push too soon. He took care to start with less controversial matters, such as the protection of external borders, before pressing for new euro-zone institutions. But his underlying strategy is clear: the more reason that France can give Germany to trust it, the more it can hope to get from Berlin.

Mr Macron senses an unusual—and probably brief—opportunity for Europe to fashion a stronger centre and stand up for itself in the world. In this respect, he can sound almost impatient with his mighty neighbour. "Germany is faced with a real choice: whether it wants a European model with a German hegemony which isn't durable, because it rests in part on courageous reforms that Germany did a dozen years ago, and in part on the imbalances in the euro zone...or whether Germany wants to participate with France in a new European leadership which rebalances Europe, with more solidarity and also a project of stronger convergence." He has no illusions about the price of failure. The choice, he judges, is about whether liberal democratic politics can prevail, and whether Europe can hold together.

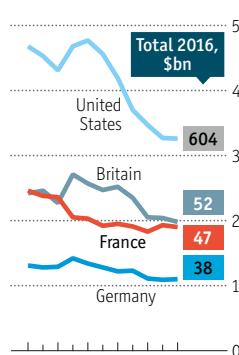
Most world leaders do not fret much about their place in history until towards the end of their tenure. Unusually for a young first-time president, Mr Macron already seems to be pondering it. He chose to place a copy of de Gaulle's memoirs, together with a ticking clock, in the background of his official portrait. Behind his outwardly sunny disposition there is both a single-mindedness and an inner solemnity about him. With America's president, Donald Trump, tempted by isolation and morally adrift, Britain in retreat and illiberal powers on the continent's doorstep, Mr Macron sees this as Europe's moment to reassert itself and its values as a guarantor of the democratic liberal order, but also as a place that secures decent lives for its people.

"Europe needs to wake up. We need to stop holding crisis summits around hyper-technical subjects...We need to define another horizon together. We can be the leaders of tomorrow's world."

As Mr Macron's presidency unfolds, there are bound to be misunderstandings, quarrels and disappointments. He wants a Europe "of different speeds", centred on the euro zone. Yet countries outside the currency area will resent being treated as second-class. His focus on the Franco-German relationship risks sidelining the rest, whether old friends or ►

Needing a lift

Defence spending as % of GDP



Source: IISS

► newer members in eastern Europe. He will rattle some with his call for a “Europe that protects”. To northern European ears, this smacks of old-style French protectionism and cuts against the principles of the EU’s single market. When Mr Macron’s government nationalised a French shipyard this summer, albeit temporarily, in order to thwart an Italian takeover, he caused dismay not only in Rome but also in other European capitals. Maybe, muttered some, the new president is not as European as he professes to be. Mindful of such risks, Mr Macron has since taken a tour of eastern European capitals, which France has too often ignored, and invited Italy and Spain to join France and Germany at a summit in Paris.

To make sense of Mr Macron’s views on Europe, it is best to avoid casting him as an Anglo-Saxon liberal. That he calls himself liberal at all is courageous in France (Mr Chirac once described liberalism as a greater threat to Europe than communism). During his campaign Mr Macron made the case for globalisation and free trade, whereas Ms Le Pen promised to put up barriers and shut out foreign competition. But “he is not the product of a liberal intellectual tradition,” says Mathieu Laine, a liberal analyst, friend and early backer of his presidential bid. “His roots are on the progressive centre-left that reconciled itself to the market economy.”

Capitalism edged in pink

“I believe in the market economy, the open world,” explains Mr Macron, “but we need to rethink regulation, so as to deal with the excesses of globalised capitalism.” Right or wrong, he judges such excesses to be behind Britain’s vote for Brexit. This directly informs his vision of the EU. “Europe is not a supermarket,” he declared in June. “He believes that if you want to keep a society open, you have to protect it,” says an adviser. The president fears that, unless Europe can offer security to its citizens as well as open up opportunities for them, political extremism will win the day and Europe will fail.

If he gets it right, he could reap big dividends. Germany needs a stronger France to help share the burden of EU leadership. Both countries fret about Mr Trump’s disdain for NATO and want to strengthen European defence co-operation. Post-war Germany has never been comfortable with the idea of being Europe’s sole leader, and remains tentative about using force abroad. Britain is distracted by self-inflicted difficulties. If Brexit

goes ahead as planned, France, a permanent member of the UN Security Council and a nuclear power, will be the EU’s only member with military muscle. Despite a squeeze on military spending, Mr Macron plans to raise the defence budget to 2% of GDP by 2025. With luck, he could look forward to a second term and a big role in Europe.

It is too early to judge how Mr Macron might be able to project such influence. He is deft at using diplomatic symbols, inviting Mr Putin to Versailles, while making it clear that he will be no pushover. But he is new to foreign and security policy, and untested as commander-in-chief. “He doesn’t want to lock himself into a doctrine, which is a good thing,” says François Heisbourg, of the Foundation for Strategic Research, a think-tank.

Mr Macron’s emerging diplomacy seems to rest on pragmatism: a belief in keeping the door open to all-comers, even unsavoury ones, on the premise that isolation breeds even greater danger. Mr Macron rejects what he calls “neo-conservatism”: the idea that Western powers can impose democracy and the rule of law on authoritarian sovereign states. He calls the intervention in Libya in 2011 a “historic error”. And he believes ardently that France can recover a global voice and maintain a capacity to back it with force. He watched with dismay as the West failed to punish Syria for using chemical weapons in 2013. If Syria does so again on his watch, he warns, he will act unilaterally.

France has entered territory that is both promising and uncharted. There is no guarantee of success. Mr Macron is bound to disappoint some and upset others. His resolve will be tested as people wake up to uncomfortable change and his popularity drops further. His parliamentary novices will occasionally stumble. The future of LRM as a party remains fragile. Yet the broad direction is right. By sticking to it, Mr Macron could begin to remove some of the historic shackles on growth in France, and in Europe more broadly.

Those inclined to carp at the young president’s mistakes might also take a look at the cast of career politicians who were swept aside by his bold advance, and recall how close to darkness the country came. Getting it right in France, a proud and volatile nation, is never simple. But the omens have seldom been as favourable, nor the stakes as high. If Mr Macron fails, the odds will be on a President Mélenchon or Le Pen in 2022, and a disintegrating Europe. That is why he is his country’s, and his continent’s, best hope. ■



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Whatever the question in Europe, the first answer for Mr Macron seems to be Germany



Political violence in South Africa

So much to cry about

UMZIMKHULU

The African National Congress is at war with itself

DEEP in the southern hills of KwaZulu-Natal, mourners came to bury Sindiso Magaqa on September 16th. In July gunmen ambushed Mr Magaqa and two other councillors from the African National Congress (ANC), South Africa's ruling party, as they sat in a car. (Mr Magaqa died in hospital on September 4th.) Three other ANC politicians from the same area were gunned down between April and May. Across the province, there have been at least 40 politically motivated killings since the start of 2016.

Most of the violence has occurred within the ANC, which is steeped in corruption at all levels. On September 27th thousands of South Africans marched in protests against the graft and the country's scandal-plagued president, Jacob Zuma, who heads the party. Nowhere is the rot within the ANC more evident than in his home province, KwaZulu-Natal, which boasts more party members than any other, though not all of the names on its rolls are real.

ANC cadres in the province compete furiously for office. Many do so because they hope to loot public coffers. Les Stuta, a friend of Mr Magaqa, believes the young councillor was murdered for asking questions about such corruption. His funeral (pictured) drew party leaders—and dozens of police, who stood guard amid fears of disputes between different factions. Tensions are rising, as the party prepares to elect new national leaders in December.

As the number of killings mounted, the premier of KwaZulu-Natal established a commission of inquiry. It began holding hearings in March on political killings since 2011. Some are a result of the fierce competition for government work—the unemployment rate in much of the province hovers around 50%. Local councillors give jobs to cronies and award contracts in return for bribes. Senzo Mchunu, a former premier, described the thinking of officials as "my turn to eat". Others are murdered over government tenders. "The broad, overarching thing is a scramble for resources," says Lukhona Mnguni, an analyst in Durban, the province's biggest city. "It is also a scramble for survival—a ticket out of poverty."

KwaZulu-Natal has a brutal past. Some



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20,000 people died in the province in fighting between the ANC and the Inkatha Freedom Party (IFP), a group of Zulu nationalists who were sometimes aided by the apartheid security police, in the 1980s and 1990s. Locals still tend to solve their problems with guns, which are in abundant supply. Police-issued assault rifles are often used in hits. Murders are carried out with near impunity. Interference by politicians derails investigations. "The crux of the problem is atrocious policing, especially in the intelligence and detective services," says Mary de Haas, who has monitored the violence in KwaZulu-Natal for decades.

At the Glebelands hostel complex near Durban, an estimated 15,000-20,000 people squeeze into decrepit, low-rise blocks that were built during apartheid to house black workers. Over 90 people have been killed there since 2014. One man was sentenced to life in prison for murder this month—the only conviction since the violence began. The troubles were set in motion by political conflict within the local ANC, says Ms de Haas. Instead of trying to improve the lives of residents, the party's councillors have neglected them. Though some party members have found them jobs—as hitmen, says Vanessa Burger, an independent activist.

KwaZulu-Natal is a key battleground ahead of the party's leadership conference in December. Party branches from around the country will send delegates to choose a successor to Mr Zuma. That person will also be the ANC's presidential candidate in 2019. Mr Zuma, who ostentatiously embraces Zulu traditions such as multiple wives, is popular in the region. So is his ex-wife and preferred successor, Nkosazana Dlamini-Zuma. But many residents back Cyril Ramaphosa, the deputy president, or Zweli Mkhize, the treasurer of the ANC.

Tensions have risen since a court deci- ►

►sion on September 12th that annulled the results of the provincial ANC leadership election in 2015 on procedural grounds. That poll had put a Zuma-aligned faction in power. The party is still arguing over whether to appeal. The next vote, in December, is also likely to be flawed. Nqaba Mkwanzani, an ANC councillor from Pongola, where a local leader was killed last year, told the commission of inquiry that he had evidence of 4,000 fake memberships created at one party branch. Mr Mkwanzani, like many others, fears the political violence could worsen in the run-up to the party conference.

In the aftermath of Mr Magaqa's death, as the party came under increased scrutiny, officials announced the creation of teams to look into the killings in KwaZulu-Natal. Provincial ANC leaders have yet to appear before the commission of inquiry, but they are expected to do so next month. The probe will make little difference. Ms de Haas doubts that any findings by the commission could be implemented, given the "dysfunctional" state of the police and criminal-justice system. Mr Mkwanzani, in his testimony, admitted that there might be only one way to stop the slaughter: for his party to lose power. Then there would be nothing to fight over. ■

The taxman as a tool of repression

Beware the taxman

NAIROBI

Revenue authorities are the latest tools of repression in Africa

DAYS after she announced her candidacy for president in May, naked photos of Diane Rwigara, a Rwandan political activist, were leaked online. Two months later she was disqualified from the election, held in August, on dubious technical grounds. But she continued to speak out against President Paul Kagame, who has been in charge of Rwanda since 1994. So this month the government tried a new tactic, detaining Ms Rwigara—and her mother and sister—for alleged tax evasion. She has since been charged with "offences against state security".

Ms Rwigara's experience is hardly unique. These days many governments that want to cow their critics are as likely to use the taxman as the secret police. Such tactics are not confined to Africa. The Russian and Chinese governments often use complicated tax rules to intimidate or punish dissidents. Nor are they entirely new. Daniel arap Moi, Kenya's dictator until 2002, turned his tax collectors into scourges of the opposition. But politically motivated arrests on tax-related charges seem to be

increasing in Africa.

Take Zambia, where most of the media favoured Edgar Lungu, the president, in the election last year. A punchy tabloid called the Post stood apart—until the Zambia Revenue Authority shut it down, saying it owed some \$6m in unpaid taxes. In April, although the Post was still appealing the decision, the taxman auctioned the paper's assets. Similarly, in Kenya, two NGOs that mulled challenging the results of the election last month were temporarily shut down over alleged tax improprieties. Their offices were raided by police and revenue officials. The results of the presidential poll were nevertheless annulled by the supreme court.

"This kind of heavy-handed thing used to happen in Kenya in the 1990s, so it's just a return to targeted oppression," says John Githongo, the director of Africog, one of the targeted NGOs. "The moment you associate with the opposition you find yourself under audit." (Mr Githongo is a former correspondent for *The Economist*.) In the Democratic Republic of Congo, where the authorities rarely collect taxes from small businesses, Martin Fayulu of the opposition Rassemblement alliance says that a hotel he owns has been repeatedly shut down over allegedly unpaid taxes.

African tax authorities have got better at collection—and not just from government critics. In the 1990s, under pressure from donors and the IMF, many countries established autonomous revenue authorities. Electronic payment is now common. According to data from the UN, between 1992 and 2012 taxes generated across the continent from sources other than natural resources increased from 12% to 15% of GDP.

But the expectation of higher revenues could be exacerbating the problem. In Kenya, as the economy slows, the revenue authority is "under a lot of pressure to collect almost unattainable amounts", says Nikhil Hira of Deloitte Kenya, a consultancy. The taxman's job is made harder by the fact



that businesses owned by leading politicians and their cronies seem to pay no tax at all in many countries.

The politicisation of taxes is undermining trust in the collectors. "There is still a very widespread perception that taxpaying is corrupt and arbitrary," says Mick Moore of the Institute of Development Studies, a British research outfit. In the long run, conspicuously vindictive tax raids will make it harder for governments to raise revenue. ■

Politics in Uganda

No country for young men

KAMPALA

Uganda's 73-year-old president seeks to abolish the age limit for presidents

“**T**HIS is a generational cause,” says Bobi Wine, back in his studio after a long day in parliament. In June the singer and self-styled “Ghetto President” (real name: Robert Kyagulanyi) won a sensational victory in a parliamentary by-election. Now he is the spokesman for Uganda’s frustrated youth in a struggle to stop Yoweri Museveni, the actual president, from extending his rule. “All the power has been packed into the presidency,” he says. “We want to take it back to the people.”

Mr Museveni used to say similar things himself, blaming Africa’s problems on “leaders who want to overstay in power”. But after 31 years at the top he has changed his mind. Politicians in his ruling party are trying to scrap a clause in the constitution which says candidates must be no older than 75 to run for president. The goal is to let Mr Museveni, 73, stand again in 2021—and probably rule for life.

There were fist-fights and flying chairs on September 26th as Mr Museveni’s supporters tried to start the process in parliament. The opposition stalled things by incessant singing of the national anthem. The next day MPs such as Mr Wine were dragged out of the chamber by security forces and the proceedings began. The amendment needs a two-thirds majority to pass, and almost certainly will. The ruling National Resistance Movement (NRM) has a thumping majority and most MPs are pliable. The legislature has helped Mr Museveni out once before, voting in 2005 to remove term limits. On that occasion MPs were each given 5m shillings (then about \$2,500), officially to “facilitate” discussions with constituents.

Still, the state is taking no chances. Three-quarters of Ugandans want the age limit to stay, according to a survey in January by Afrobarometer, a pan-African research network. Demonstrations have ►



Mr Museveni refuses to hang up his hat

▶ been banned. Police have tear-gassed protesting students and raided the offices of two civil-society groups. The mayor of Kampala, the capital, who opposes the bill, was arrested in the middle of a television interview and bundled into a police van.

This is not the “fundamental change” that Mr Museveni promised when he took power in 1986 at the head of a rebel army. He restored stability to most of the country, which had been torn apart by dictatorship and war. Simeon Nsubuga, an NRM MP, says Ugandans should be grateful to Mr Museveni for ending “20 years of turmoil, suffering and killings”. Many are. But four out of five Ugandans are too young to remember those days.

Instead, the young complain about crumbling services and too few jobs. For the first quarter-century under Mr Museveni growth in income per person averaged 3% a year; in the past five years it has been just 1%. Yet few dare take their grievances to the streets. Even the young “live under the canopy of history”, notes Angelo Izama, a local pundit. Uganda has never had a peaceful transition of power, and few citizens think Mr Museveni would ever leave office without a fight. The old warrior sometimes dons his uniform, a reminder that this is still, in some respects, a military regime. Last November over 150 people were killed during army operations in the restless Rwenzori mountains.

Meanwhile Mr Museveni is the pivot on which power turns, intervening in everything from land disputes to the regulation of motorbike taxis. When a minister showed up recently to address local leaders, they hurled water and chased him away; only the president would do, they said. “There are no institutions,” sighs Anna Adeke, a 25-year-old MP. “Everything can be changed by a phone call.”

So “the old man with a hat” will carry on, at once the guarantor of stability and the greatest threat to it. The age-limit clause

is “the last remaining check to ensure an orderly succession”, says Frederick Ssempebwa, a lawyer who helped draft the constitution. Without it, he adds, the president is “almost invincible”. Yet one day Mr Museveni will die and Uganda, its politics warped by the whims of one man, will face uncertainty once again. ■

Iran's Kurds

Catching on?

A referendum held by Iraqi Kurds is revving up their Iranian cousins too

THE Kurds of Iran are calling for independence just as lustily as their cousins in Iraq, perhaps even more so. While the mood in the streets of Iraq’s Kurdish cities was generally subdued and nervous after their referendum on independence on September 25th, wilder celebrations erupted across the border in Iranian Kurdistan. In the Kurdish cities of Baneh, Sanandaj and Mahabad demonstrations lasted for



two days, even as armoured cars drove through the streets heralding a wave of arrests. Crowds sang the anthem of the Republic of Mahabad, the Kurdish state that briefly held sway in north-western Iran in 1946. Kurdish flags flew from lampposts.

Some Iranian Kurds talked dreamily of a state they call Rojhelat, or East Kurdistan, which would slough off the “occupation” by Ajamastan, a pejorative term for Iran. “There’s a new self-confidence among Kurds,” says Luqman Sotodeh, a prominent Iranian Kurd. “The whole world stood against the referendum, but the Kurds held it regardless.” Kurdish officials say that over 90% of voters backed independence.

The ruling clerics in Tehran, Iran’s capital, expressed outrage, threatening to crush the Kurds’ experiment in self-rule in Iraq. Likening the would-be state to another Israel (which supports Kurdish independence), they promised to reduce it to another Gaza: a besieged, impoverished and pummelled little annexe. “Remove this stain of disgrace from the Muslim world,” said Ali Akbar Velayati, an adviser to his country’s supreme leader. Only a month ago protests broke out in several Iranian Kurdish cities and were quelled by tear gas.

Iran fears also that its perennial foes, Israel and Saudi Arabia, may be tempted to use an independent Iraqi Kurdistan as a springboard for making trouble across the border in Iran, much as Iran uses its Lebanese proxy, Hizbullah, to threaten Israel across its northern border. Moreover, Iran has many ethnic groups to contend with. If the Kurds were to get frisky, fret Iran’s rulers, then their own Arabs, Azeri Turks, Baluchis and other minorities, who make up nearly a third of Iran’s mainly Persian state, might follow suit.

A separatist Baluchi group killed ten Iranian border guards in April. In May Arab militants attacked a police station in Ahvaz, a turbulent Arab city in the province of Khuzestan, which abuts Iraq’s south-eastern border, killing two policemen. There has also been a steady infusion of Sunni Iranian Kurds into the ranks of Islamic State (is), which calls for the overthrow of Iran’s Shia regime. An is attack on Iran’s parliament and Ayatollah Khomeini’s shrine was probably carried out by jihadist Iranian Kurds.

The four countries surrounding Iraqi Kurdistan—Iran, Syria, Turkey and the rump of Arab Iraq—all fear that the referendum may provoke a resurgence of Kurdish nationalism. Syria is thought to have over 2m Kurds, Iraq 5m or so, Iran 5m and Turkey 18m. Turkey has placed tanks on the edge of the statelet. Its president, Recep Tayyip Erdogan, has threatened to shut off Kurdistan’s only pipeline exporting its oil and close its borders.

Of this quartet Iran has historically had the most to worry about. For seven centuries its Kurds had their own more or less in-

► dependent fief, known as Ardalan, nestling in the mountains between the Ottoman and Persian empires. Turkey's Kurds are pretty distinct from Iraq's, since the Turkish ones are predominantly Alevi (some call them Shias). But Iranian Kurds are much closer to Iraq's. They speak the same dialect, Sorani. Most of them follow the same Shafi school of Sunni Islam. Their political movements tend to affiliate with each other across the border.

Were Iranian Kurds to start a serious revolt, Iran's forces would have the upper hand. It took but a few months for them to smother the Mahabad Republic in 1946. And after Iran's Islamic revolution in 1979 a Kurdish rebellion was promptly put down, leaving around 10,000 people dead. Nevertheless, this referendum has spooked Iran's leaders all over again. ■

The Israel Defence Forces

In which we don't serve

JERUSALEM

Growing trouble over drafting ultra-Orthodox Jews into the army

DURING the violent birth of Israel, David Ben-Gurion, its first prime minister, allowed 400 ultra-Orthodox Jews (also called Haredim) to avoid compulsory military service to pursue a life of Talmudic study. He may have thought they were too few to matter, or that their endangered traditions should be nurtured after the Holocaust. Seven decades on, however, the number of such *yeshiva* students has exploded to 60,000. They are still allowed to dodge the draft, and many do not work, either. Other Israelis resent this.

The clash between those who serve God and those who serve their fellow citizens was on display on the streets of Jerusalem on September 17th. Thousands of ultra-Orthodox protesters had gathered to denounce a decision by Israel's high court—the third in two decades—that the exemption of *yeshiva* students from military duty was unconstitutional because it enshrined inequality. Many were followers of a rabbi whose son was arrested in March after refusing even to apply for the required exemption papers. Police cleared them off the streets by using water cannons and their fists.

A small but growing number of ultra-Orthodox men serve in the army, often in bespoke units where religious strictures, such as sex segregation, can be maintained. The army says that, of its intake of 98,000 recruits last year, 3,200 were Haredim. Owing to their needs, drafting thousands more would be a logistical nightmare that many generals would prefer to

avoid. What is more, Haredi political parties, which have been an integral part of most Israeli coalitions in recent decades, would bring down the government if a full draft were enacted. As a way out of the political and legal conundrum, some ministers in the right-wing coalition of Binyamin Netanyahu, the prime minister, want the power to pass legislation that is immune from review by the high court.

In practice, it is not just the Haredim who avoid military service. Arab Muslims, around 20% of the Israeli population (excluding the occupied territories), are exempt; so are many Jewish women. Among 18-year-old Jews (including the Haredim), 28% of males and 42% of females avoided the draft last year.

Equality is a slippery concept. Men serve longer in the army than women. Pay and conditions vary widely between, say, combat soldiers and those with clerical duties. Units involved in cyberwarfare produce veterans with skills and connections that help them find jobs at tech firms. Strenuous and life-endangering service in the field, by contrast, creates fewer and less lucrative opportunities on civvy street.

Rather than force Haredim into uniform, the government might do better to nudge them to learn more practical skills and join the workforce. Israel's unemployment rate is only 4%, but productivity is low and many Haredim are not even looking for work. Many lack relevant skills; some shun the secular world. A study by the finance ministry shows that, despite efforts to boost jobs for Haredim, their participation rate in the labour force has fallen by three percentage points to 51%, compared with 89% in the rest of the Jewish population. Among those aged 25-34, when young men typically join the workforce, the rate is a dismal 41%. Military service may help some into the jobs market. But integrating the Haredim into modern Israel will take more than just giving them a gun. ■



This one's tired and needs a rest

Egypt's Shia

Out of hiding

CAIRO

Shias in Egypt want to pray freely

SINCE the dawn of Islam, Shias have been trying to penetrate Egypt. Ali, the Prophet Muhammad's son-in-law and the first imam of Shia Islam, sent a loyal follower to govern the area. But no sooner had he arrived than he was captured by Sunni opponents, sewn into the belly of a donkey and burnt. Later the Fatimids, a Shia dynasty, captured Egypt and ruled it for two centuries. But Saladin overthrew them and, according to Shia lore, massacred thousands while levelling much of Cairo. "Kharab al-Din," spits a Shia librarian in Alexandria, twisting Saladin's name to mean destroyer of religion.

Since then Shias in Egypt have pretended to be Sunnis. Some cloak their traditions in the mystical rites of the Sufis. They join their *moulids*, or birthday celebrations, for saints and camp at the shrines of the prophet's relatives. Holy men can be found beating themselves into a trance, recalling past Shia practices. Many Sunnis, in turn, have adopted Shia traditions. "Egypt is Sunni by sect, but Shia by temperament," is an oft-cited saying.

Because they disguise their identity, no one quite knows how many Shias there are in Egypt. Estimates range from 50,000 to 1m. After the Arab spring in 2011, some came out of hiding. They formed Facebook groups, opened halls for commemorating Shia martyrs and collected tithes on behalf of Ali Sistani, the grand ayatollah in Iraq. "We have judges, police and civil servants," says a Shia ironmonger in Cairo, who secretly converted from Sunnism. There are even said to be Shia sheikhs teaching Shia law at Al Azhar, the Sunni world's most prestigious centre of learning.

After the Muslim Brotherhood won elections in 2012, many Shias scuttled back into hiding. Stick-wielding Salafis patrolled the shrines. But President Abdel-Fattah al-Sisi, who toppled the Brotherhood, has made life for the Shia a bit easier. The Al-Hussein mosque in Cairo might even stay open on September 29th for Ashura. Shias often visit the site, where the severed head of Ali's son, Imam Hussein, is buried.

Yet Shias visiting the ayatollahs in Iran and Iraq are still interrogated on their return, as if they were a fifth column. They pray like Sunnis in public and shy from publishing their names. But "for now it's easier to be Shia in Egypt today than Salafi," cheers the librarian.



Germany's election

Merkeldämmerung

BERLIN

A weakened Angela Merkel enters the last chapter of her chancellorship

AT THE headquarters of the free-market Free Democrat Party (FDP) on September 24th activists gasped as the first exit poll results were read out: Angela Merkel's Christian Democrats (CDU) and the Christian Social Union (CSU), their Bavarian sister party, were on just 32.5%, much lower than any poll had suggested. Then, a few seconds later, came a gargantuan cheer. The FDP had almost doubled its vote share to 9%. "If you keep cheering after every sentence this will be a long night!", a visibly delighted Christian Lindner, the FDP leader, told the crowd.

Such was the story of the night. The CDU/CSU and their Social Democrat (SPD) coalition partners both did badly. Their joint vote share fell from 67.2% to 53.5%, its lowest ever (see chart 1). So grim was the SPD result that party leaders immediately announced that they would not be available for a second "grand coalition" with Mrs Merkel, even if asked. The FDP's stellar result saw it comfortably clear the 5% hurdle needed to join (or in this case, re-enter) the Bundestag. The Greens defied poor polling and gained four seats, while the socialist Left party added five. Most notable of all, the anti-immigrant Alternative for Germany (AfD) party soared to almost 13%.

This means that Germany's new parliament will be the most fragmented in post-war history, with a record six parties represented (seven, if you count the CSU separately). A new, more fractious political era

seems to have begun.

The most drastic change is the AfD's arrival in the Bundestag as the third-largest party, having gained about a million votes each from the CDU/CSU and the political left (the SPD and the Left party). Its success points to the endurance of Germany's longitudinal divide: it took a whopping 20.5% of the votes in the former communist east. It is also especially alarming in a country with Germany's Nazi past. Two weeks ago Alexander Gauland, the AfD's probable leader in the Bundestag, opined: "we have the right to be proud of the achievements of the German soldiers in two world wars." The day after the elec-

tion he felt it appropriate to question Germany's relationship with Israel.

Still, the party's success should not be exaggerated. It is a new amalgamation of old political forces in Germany, like the nationalist-conservative wing of the CDU in the west and strong residual anti-Western sentiment in the east (see chart 2), melded together by the fact that the country has taken in 1.2m immigrants in two years, an experience Mrs Merkel stresses it will not repeat. Fully 61% of the AfD's voters said they were motivated by disappointment with the other parties (compared with 30% for the electorate overall).

Meanwhile the party's ability to use its electoral windfall effectively is questionable: it is fractious to the point of parody. The morning after the election a newly elected Frauke Petry, the party's former leader, announced in front of stunned colleagues at a press conference that she would not be sitting in the AfD group in the Bundestag, and walked out. She is said to be planning to found a splinter party.

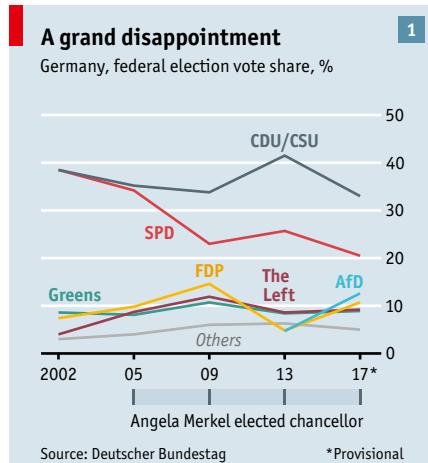
Mrs Merkel's refugee policies were a factor behind the failure of the two big parties, but far from the only one. After 12 years of the same chancellor, eight of them in a baggy coalition with the SPD, voters turned to narrower, more distinct parties in a trend that is present across much of Europe. The fragmentation of the Bundestag looks modest compared with the 13-party Dutch parliament, for example (unlike in Germany, the Netherlands has no threshold for representation).

As in the Netherlands, coalition talks could take a long time. They will only begin in earnest after a state election in Lower Saxony on October 15th. Unless the SPD changes its mind about another grand coalition, the only numerically possible option is a "Jamaica" coalition of the CDU/CSU, the FDP and the Greens, so called as ►

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► their colours are those of the Caribbean nation's flag. Such a government would have a wide ideological span and require some bending of red lines; the Greens, for instance, insist they will only enter a government that steers Germany towards a ban on cars with internal-combustion engines, while the CSU say they will only join one that does not.

But Mrs Merkel will probably manage to pull such a government together, even if it takes her until January. It would probably focus heavily on digitisation, improving education and infrastructure, subjects on which the parties broadly agree, and would be expansionary, cutting taxes (an FDP priority, and one that will help boost the wider European economy) and investing in things like renewable energy (a Green one). The Greens may take the foreign ministry, while the FDP has its eye on the finance ministry, which Wolfgang Schäuble is vacating. This means that Europe is likely to prove an area of conflict; the Greens are more federalist, while the FDP's Mr Lindner has said that Greece should leave the euro zone and ruled out large new transfers to southern countries.

It all comes at a time when Germany is under pressure to lead in Europe, and to make concessions towards euro-zone integration (see Charlemagne). Mrs Merkel is sceptical about these anyway—she thinks the euro zone's problems demand structural reforms in weak economies rather than more German cash—but even were she not, she would struggle to persuade her partners in a future Jamaica government.

For the chancellor has been weakened by the election result, dubbed by the *Bild Zeitung*, a tabloid, a “nightmare victory” for her. Her alliance has lost 65 MPs. A Ja-

maica coalition could prove scrappy; the FDP and the Greens spent much of the election campaign at each other's necks over big subjects like refugees and the environment. Meanwhile the chancellor will be wary of boosting the AfD, which for all its internal squabbles will be noisy and provocative in the Bundestag, and which started life as an anti-bail-outs party focused on the euro. The next round of Greek-debt talks next summer could be especially tricky. Daniela Schwarzer of the German Council on Foreign Relations stresses Germany's “enormous need” to “explain to our international partners what the presence of the AfD in the Bundestag means.”

Mrs Merkel's scope for international leadership is also constrained by tensions in her own political camp. The CSU, for example, blames the chancellor for its deep losses in Bavaria, where the party's long-standing hegemony will be tested in a state election next year. On election night Horst Seehofer, the CSU leader, said the CDU/CSU needed to attend to its right flank: “it wouldn't be good just to carry on as before,” he added ominously. In the CDU, too, dissent is growing. On September 26th, 53 of Mrs Merkel's 246 MPs voted against one of her closest allies staying on as head of the Bundestag group.

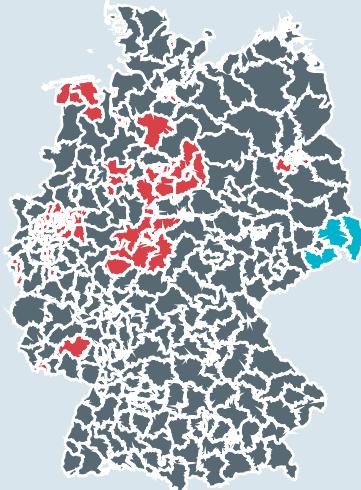
Minds are also turning to the chancellor's departure, which may have been brought forward by the mediocre result. Free Conservative Awakening, an energetic faction on the CDU's right, is calling on Mrs Merkel to step down as party chairman (a post separate from the chancellorship). Among others it suggests Jens Spahn, the deputy finance minister viewed by some as a possible successor, for the job. The twilight of Mrs Merkel is at hand. ■

Who won where

Germany, federal election results, 2017

Constituency winners

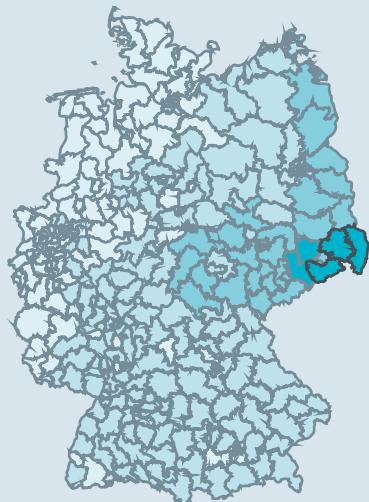
■ CDU/CSU ■ SPD ■ AfD ■ The Left ■ Greens



Source: Federal returning officer

Alternative für Deutschland list vote share, %

□ Less than 10 □ 10-20 □ 20-30 □ 30+



Italy

Safe so far

ROME

Why, unlike other European countries, has Italy avoided Islamist terror?

THE image is of a young man with his back turned, grasping a large knife. Beside him in stark white capitals are the Italian words “Devi combatterli” (“You must fight them”). The photo-montage, circulated in late August on Telegram, the favoured communications app of Islamic State (is), is a blatant incitement to “lone wolves” to kill Italians. It was reproduced on the website of Site Intelligence Group, which monitors jihadist communications, days after a video circulated of masked, is-affiliated guerrillas in the Philippines sacking a Roman Catholic church and ripping up a picture of Pope Francis.

“You. Kafir [Infidel]. Remember this,” says a masked figure, wagging his finger at the camera. “We will be in Rome, *inshallah*

The most colourful explanation for the Italian exception is that Italy's mafias have quietly deterred jihadists from gaining a toehold. The defect of that idea, says Arturo Varvelli of the Milan-based Institute for International Political Studies, a think-tank, is that Italy's mobsters exert greater control in the south, whereas a sizeable ►

▶ majority of its Muslims live in the north.

"To some extent, it is the Mafia," says a senior law-enforcement official. "But not in the way most people mean." The fight against Italy's formidably organised criminals has given its police a wealth of experience in monitoring tightly knit target groups. It was enhanced by the campaign to subdue the left- and right-wing terrorists who wrought havoc in Italy in the 1970s and 1980s. Organised crime and terrorism have also encouraged judges to take a more expansive attitude than in other European countries to issuing warrants for wiretaps and particularly to the electronic surveillance of suspects' conversations. Italy's recent history may also explain its hardline approach to apologists for terrorism.

On September 24th, when a Boeing 737 took off from Bologna airport bound for Tirana, the capital of Albania, it carried the 209th person to be expelled from Italy since the start of 2015 for reasons of "religious extremism". The 22-year-old Muslim had been released from custody a day earlier, after being arrested for trying to persuade worshippers not to enter a church. He had been under constant police scrutiny since first being detained in 2016.

But, as Italian law-enforcement agents readily concede, they have fewer suspects to monitor than their French and British counterparts, and that is only partly because large numbers have been deported. The number of so-called "foreign fighters" from each European country offers a guide to radicalisation. A study for the American National Bureau of Economic Research, using figures from 2014-15, found only 87 foreign fighters from Italy, compared with 760 from Britain and perhaps 2,500 from France (all three countries have similar populations). That, argues Mr Varvelli, is for two reasons. First, few of Italy's Muslim immigrants belong to the second generation, which is the most susceptible to radicalisation (0.3% of Italian residents are second-generation immigrants of non-EU origin, against 3% in Britain and 3.9% in France). Second, Italy has no Muslim ghettos like the French *banlieues*.

Michele Groppi, who teaches at the Defence Academy of the United Kingdom, points to a third important factor: evidence to suggest that, while al-Qaeda was the dominant force in the jihadist world, it used Italy as its logistical base in Europe. "That is what kept us safe; they needed us," he says. The situation has changed since: several jihadists who have recently attained notoriety have had links to Italy. Among them is Youssef Zaghba, a Moroccan-born Italian and one of the three terrorists who used a truck and some knives to kill eight people on and around London Bridge on June 3rd. Mr Groppi worries that if Libya were to become the next theatre of jihadist insurgency, Italy and the Vatican could become prime targets. ■

Turkish schools

Erdogan v Darwin

ISTANBUL

No monkeying around

DAYS before the start of the new school year, Merve, an eighth-grade science teacher, is flipping through the pages of her old biology textbook. A picture of a giraffe appears, alongside a few lines about Charles Darwin. Teaching evolution in a predominantly Muslim country where six out of ten people refer to themselves as creationists, according to a 2010 study, has never been easy. As of today it is no longer possible. A new curriculum has scrapped all references to Darwin and evolution. Such subjects, the head of Turkey's board of education said earlier this summer, were "beyond the comprehension" of young students. Merve says her hands are now tied. "There's no way we can talk about evolution."

Turkey's president, Recep Tayyip Erdogan, has made clear on more than one occasion that he would like to bring up a "pious generation" of young Turks. He has made plenty of headway. The education ministry, says Feray Aytekin Aydogan, the head of a leftist teachers' union, is working more closely than ever with Islamic NGOs and with the directorate of religious affairs. Attendance at so-called *imam hatip* schools, used to train Muslim preachers, has shot up from about 60,000 in 2002 to over 1.1m, or about a tenth of all public-school students. The government recently reduced the minimum population require-

ment for areas where such schools are allowed to open from 50,000 to 5,000. An earlier reform lowered the age at which children can enter them from 14 to ten.

The new curriculum has left Turkish liberals and secularists aghast. From this year onwards, children as young as six will be taught the story of last summer's abortive coup—presumably without including the mass purges and arrests that followed it. *Imam hatip* students, meanwhile, will study the concept of jihad. (The education ministry says the term, which can also refer to one's personal struggle against sin, has been misused.) A module on the life of the Prophet Muhammad will teach the same pupils that Muslims should avoid marrying atheists, and that wives should obey their husbands. Schools are also becoming a target of Mr Erdogan's mosque-building spree. A new rule requires that all new schools be equipped with prayer rooms, segregated by sex. "The interference of religion into education has never been as visible and as deep," says Batuhan Aydagul of the Education Reform Initiative, a think-tank in Istanbul.

During its first decade in power, Mr Erdogan's ruling Justice and Development (AK) party indeed presided over vast improvements in the country's education. As the economy boomed, millions of Turks lifted themselves out of poverty. Many more young Turks, especially girls, started going to school. Spending increased, and thousands of new schools opened. Yet progress has stalled since then. Student performance, as measured every three years by the Programme for International Student Assessment (PISA), having improved until 2012, dipped in 2015. Turkish students scored second to last among all OECD countries that year. The previous curriculum placed a bigger emphasis on critical thinking. The new one has reverted to an emphasis on rote learning.

Turkish parents complain of incompetent teachers, too little emphasis on languages, and crowded classrooms. (The sacking of over 30,000 teachers suspected of dissident sympathies since the coup has not helped.) Many now resort to private schools. Devrim Ertekin, a drug company employee, recently enrolled his six-year-old son in a private pre-school in Istanbul, though the fees are a big drain on his income. "We no longer trust the school system," he says. The feeling appears to be widely shared. The share of Turkish high-schoolers in private education has swelled from 7% in 2011 to 20% last year.

Turkish schools may indeed underperform, but in Mr Erdogan's eyes only they can be trusted to raise genuine patriots. Students who are sent to the West for education, he said on September 25th, "return as the West's volunteer spies". He might care to recall, however, that all four of his children studied abroad. ■



Spain

The law and the vote

MADRID

A propaganda battle over the Catalan referendum

TO DESCRIBE the Spanish government's approach to the unconstitutional independence referendum organised by the regional administration in Catalonia on October 1st, a senior official recently quoted Sting: "Every step you take, I'll be watching you." And so it has been. In the run-up to the promised ballot, Catalonia is tense. But officials are confident that they have prevented anything resembling the organised vote that Carles Puigdemont, the Catalan president, intended to deliver a "binding" result. The most that will happen, predicts another official in Madrid, is an informal exercise in which some votes may be cast in makeshift stalls.

The conservative government of Mariano Rajoy has relied on the courts to disrupt arrangements for the vote. On the orders of a Barcelona prosecutor, a dozen key Catalan officials were arrested (and later freed) and 9.8m ballot papers seized. The Generalitat, as the Catalan government is called, dissolved the electoral authority it had set up after Spain's constitutional court threatened its members with daily fines of €12,000 (\$14,100) each. The interior ministry has flooded Catalonia with thousands of extra police. A prosecutor has ordered the local police force to seal off schools and other public buildings that are normally used as polling stations.

Mr Puigdemont complains that all this amounts to a de facto suspension of regional autonomy, and insists the referendum will still go ahead. He told La Sexta, a television channel: "What makes a referendum? The people." But will the people co-operate? The arrests were met with protests in Barcelona, but demonstrators have so far numbered only in the low tens of thousands. Some of his supporters want him to issue a unilateral declaration of independence on October 2nd. But he has played down such talk, saying it would be for the Catalan parliament to decide.

In the absence of a clear majority for independence in Catalonia, Mr Puigdemont's administration is waging a propaganda battle. It portrays the Spanish state as repressive and undemocratic. Photos of queues of people unable to vote would reinforce that image.

One of the Generalitat's main targets is international opinion. It has set up ten "embassies" abroad and plans more. Yet the only foreign leaders who have expressed support for the referendum are Nicolás Maduro of Venezuela and Nicola

Greece

Owls of rage

ATHENS

Anti-austerity street artists are making the capital hipper

GREECE is enjoying a record year for tourism, and not just on white-washed Cycladic islands. A seven-year recession has been horrible for Greeks: in Athens, shabby residents rummaging through rubbish bins are an everyday sight. But the crisis has made Greece cheaper for holidaymakers, whose spending supports plenty of local jobs. Overnight stays by foreign visitors in the capital have increased by almost 40% over the past three years, say local hoteliers' associations. "Athens used to be just about museums and ancient ruins. But not any more," says an American banker. Dozens of new bars and cafés are popping up, and a flowering of street art and graffiti has given the city an edgier look.

Much of the graffiti scrawled or stencilled on empty buildings and shuttered shop fronts has a resentful tone. "Vasani-zomai" ("I'm being tortured") is one popular slogan. "Kleista gia panta" ("Closed forever") is another: one in four retailers in the city's centre has gone out of business since the crisis started in 2009.

Street artists, though, are faring better. No longer considered vandals, some even win commissions to spray-paint a sponsor's chosen site. Nikos, a "resting"

street artist who these days guides well-heeled foreign tourists around grimy downtown districts to view the most talked-about pieces, says new themes such as feminism and the plight of Syrian refugees arriving in Greece are gradually replacing anti-austerity work.

"The art here used to be angry and unsightly but now it's wittier...there's resignation but there's energy, too," says Michael Landy, a British artist, who worked in Athens earlier this year. Landy transformed several hundred pieces of graffiti, contributed by Athenians through social media, into permanent artworks. Crowds flocked to the exhibit, staged in a decaying school building.

City-hall officials keep a careful watch. Too big a concentration of graffiti looks threatening and makes tourists feel unsafe, says Elina Dallas, an architect heading the renovation of Trigono, an old-fashioned central neighbourhood that became a target of "taggers" spray-painting scores of personal symbols on walls and doorways. When a giant portrait of a fierce-looking owl, the emblem of Athens since ancient times, was itself graffitied, it was quickly cleaned up. The owl, by an Asian street artist, has become as famous as any museum piece.



Athena's watching you

Sturgeon of Scotland.

There has been muttering around Europe at what some see as Mr Rajoy's heavy-handed approach. But no government is keen to encourage separatism, in Spain or elsewhere. The European Commission has restated that Catalonia would leave the EU if it leaves Spain. Alfonso Dastis, the country's foreign minister, says he is satisfied with the level of support he has received.

Even Donald Trump has backed Madrid.

According to Mr Puigdemont, the Generalitat has "broadened the perimeter of knowledge of what's happening in Catalonia". Its efforts are focused on parliaments and the foreign media more than governments. It is playing a long game for international opinion. Mr Rajoy may be winning the immediate legal battle, but the political war over Catalonia is far from over. ■

Charlemagne | The Emmangela show

One plodding, one striding, the leaders of Germany and France will change the EU



WHAT a study in contrasts. To the strains of Beethoven's "Ode to Joy", the anthem of the European Union, Emmanuel Macron strides manfully across the courtyard of the Louvre to deliver his victory speech. France's new president vows to defend the EU, "the common destiny the peoples of our continent have given ourselves". A few months later, after a bruising election result, Angela Merkel gives a plodding press conference in a functional room in Berlin, tentatively extending a hand to the parties her wounded Christian Democrats must woo into coalition. As for Europe, do not get your hopes up. "Today," she says, "isn't the day to say what will work and what won't."

The future of the EU lies somewhere in the gap between a bold young president whose ambitions extend far beyond France's borders, and a cautious chancellor approaching her political end, running a country not yet ready to accept the mantle of leadership many would like to thrust upon it. Mr Macron campaigned on a promise to shake up France and to do his best to repeat the trick in the EU. But during Germany's pedestrian election campaign Mrs Merkel neither sought nor obtained a mandate for a European overhaul. Many of her voters see no reason for it.

This week Mr Macron's vision for Europe found its fullest expression yet, with a sweeping 100-minute address at the Sorbonne that took in everything from defence co-operation to agricultural subsidies—the third rail of French politics—and culminated in a plan for a five-year "transformation" of the EU between 2019 and 2024, the year in which, not coincidentally, Paris will host the Olympic Games. His riposte to those who found all this a little hasty was delivered in full Macronese: "Procrastination", the president proclaimed, "is the cousin of languor." It was stirring stuff, if a little dirigiste for many: Mr Macron's calls for corporate-tax harmonisation, or for a single market based on "convergence rather than competition", will jangle nerves in liberal-minded corners of Europe. Still, Mr Macron's proposals may now form the starting-point for discussion among the EU's leaders, who were preparing to meet in Estonia as *The Economist* went to press. "Mr Macron", says one EU official, "has stolen the show."

It is impossible to imagine Mrs Merkel making this speech. The chancellor has dominated the EU not by pursuing anything so marvellous as a vision, but by placing herself, and the clout of

the large country she runs, at the heart of each of the crises the EU has battled, while other leaders, including successive French presidents, have retired hurt. Do not expect this to change. The notion that Germany's election result makes Mr Macron's life much harder is an overstatement—but that is because there was no conceivable coalition that would have bowed before his demands. Still, his room for operation is even less than it was. Having successfully carved out a mildly Eurosceptic niche, the pro-market Free Democrats (FDP), one of Mrs Merkel's expected partners, will exact a price on EU policy during the coalition talks.

That does not mean Mr Macron is doomed to achieve nothing at all. He urged renewal of the Élysée Treaty, the compact that has governed Franco-German relations for over half a century, and had lots to say on migration and security, preoccupations in Berlin that might form the basis for an early Franco-German deal (though a stitch-up risks alienating other members). Some details will rattle, but Mr Macron's overarching vision, of a Europe that defangs populists by protecting its citizens from the rougher edges of globalisation, is not unpopular in Germany, and will face weaker opposition inside the EU once Britain leaves.

Sensibly, Mr Macron chose not to press his argument that the euro zone needs rebuilding from the ground up, including a vast budget that he has previously suggested should be worth several percentage points of euro-zone GDP (the current EU budget is just 1.2%). Advancing these claims just as Germany's parties were beginning to jostle for position in coalition talks would have backfired spectacularly; immediately after the election Christian Lindner, the FDP's leader, ruled out signing up to a big euro-zone budget. No doubt Mr Macron remains convinced that the currency area needs the overhaul he promised during his presidential campaign. But even Jupiter knows when to stay his hand.

This one weird trick could fix the euro zone

Mr Macron will still hope to obtain a foothold for prototypes of his lesser ideas: a small budget for investments; a (rather titular) "finance minister" for the euro zone; a tweak to its bail-out fund. The European Commission, which has plans of its own, will test the waters with proposals in December; the euro-zone's 19 leaders will chew them over at a summit soon afterwards.

But the real action may lie elsewhere. Five years ago the euro zone agreed to establish a banking union. The results were impressive, but governments have failed to agree on all the scheme's elements, including a European fiscal backstop to rescue troubled banks and a common insurance scheme for deposits. Breaking this logjam, rather than any institutional jiggery-pokery, will be the first, and best, test of whether France and Germany can overcome their differences to put the single currency on a more stable footing. Along with plans to deepen Europe's capital markets, spreading financial risk and breaking the "doom-loop" between governments and banks overburdened with sovereign debt may do much more for the euro's resilience than a modest budget or a toothless finance minister.

Mr Macron did not mention the banking union this week: he was seeking to inspire his listeners, not put them to sleep. But he knows well that it will take more than fine words to overcome German suspicions that the French (and other budget-busters) simply want their fiscal recklessness subsidised by the more frugal. The scene is set: after a long winter of crisis, the political and economic winds for Europe are now fair. Mr Macron and Mrs Merkel will not get a better chance. ■



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The Brexit negotiations

From Florence to Manchester

BRUSSELS AND LONDON

The prime minister moves the negotiations forward, if not enough to start trade talks. But her biggest problem remains party splits over Brexit

HERESA MAY will face a lukewarm reception next week at the Conservative conference in Manchester, the first big party gathering since the disastrous election in June. It will be the second difficult pitch in a fortnight for the prime minister, who on September 22nd travelled to the balmier climes of Florence to deliver a speech aimed at European Union leaders.

The objectives of the Florence address were twofold: to break the deadlock in the Brexit talks, and to heal divisions in her party. At first blush, she seemed to have failed with the first objective, as EU leaders lined up to call for greater clarity and insist they could not negotiate through the medium of speeches. But with many of her cabinet present in Florence, Mrs May appeared to have succeeded with the second. Yet a week on, a more accurate reading is the other way around. She has moved the Brussels talks forward, but the splits in her government are as glaring as ever.

The Florence speech was better than many in Brussels feared, in three ways. The first and most important was its conciliatory tone. Not only did she offer compromises over the Brexit divorce. She also dropped threats to use security as a bargaining chip and promised not to seek an unfair advantage through deregulation post-Brexit. And, at least until the after-speech questions, she ditched her mantra that no deal was better than a bad deal.

The second was her explicit recognition

of the need for a transition period after March 2019, when Brexit is due to happen. Partly to please Eurosceptics in her party, she insisted this must be time-limited, but she did not specify how long it would last beyond the vague phrase "around two years". She also made clear that during this period current arrangements would apply, including free movement of people, acceptance of the European Court of Justice and payments into the EU budget.

That set the stage for her third concession, which was over money. An agreement to prolong the status quo for two years would not only avoid a cliff-edge Brexit and give business more certainty, but also imply an extra €20bn (\$24bn) in net contributions. And Mrs May went further by promising to "honour commitments we have made during the period of our membership". That appears to point to another large payment towards the exit bill demanded by Brussels.

The response from the rest of Europe was still cautious. Michel Barnier, the EU's Brexit negotiator, called the speech "constructive" but asked for more specifics on the outstanding issues in the divorce. After meeting Mrs May in London on September 26th, Donald Tusk, the European Council's president, welcomed the speech's "more realistic tone" and suggested that Britain had dropped its policy of having its cake and eating it. But he warned that there had not been sufficient progress over the di-

vorce for EU leaders to agree in mid-October to open talks on future trade.

Mr Barnier and David Davis, the Brexit secretary, resumed their negotiations in Brussels this week. Mr Barnier wanted more certainty over the rights of EU citizens in Britain. Mr Davis insisted that a settlement of the exit bill must depend on the outcome of trade talks. Nobody has a solution to the third divorce issue, averting a hard border in Ireland. In Florence Mrs May insisted there should be no physical infrastructure, but did not say how it could be avoided if, as she also proposed, the United Kingdom leaves the EU's customs union and single market.

Indeed, the fuzziest part of her speech was over Britain's future trade relations with the EU. She was clear only about the two models that she rejected. First was Norway, which has the benefits of single-market membership but at the cost of observing EU rules with no say in them. And second was Canada's free-trade deal, which avoids the rules but does not cover most services. Insisting "we can do so much better than this," Mrs May proposed a bespoke deal somewhere between the two. It is not obvious that this will be on offer. Even if it is, it will take years to finalise and ratify. Mr Barnier insists that initial Brexit talks must finish in 12 months.

Mrs May's biggest problem is not with Brussels but with her own party, which will be in a chastened mood in Manchester. Despite the show of cabinet unity in Florence, Boris Johnson, her foreign secretary, has let it be known that he personally shot down the Norwegian model, as well as insisting on a limit of two years for transition. He also contradicted Mrs May by suggesting that new EU rules would not apply and free movement would stop in March 2019. Mr Johnson and Liam Fox, the international-trade secretary, chose this ➤

► week to launch a new think-tank advocating a hard Brexit. Yet other ministers, including Philip Hammond, the chancellor, still want a softer version that might at least keep the customs union option open. That the Labour Party, which met in Brighton this week, is equally torn over these issues is only small consolation.

Developments in the rest of Europe may not help Mrs May much. This week's speech on the EU's future by the French president, Emmanuel Macron, held out hopes of Britain once again taking part in the club. But it was also a reminder that Brexit is not the EU's most pressing problem. The German election adds another distraction, as it may take Angela Merkel months to forge a new coalition government. Nor will a rapidly improving Euro-

pian economy encourage more generosity to a Britain whose credit rating has just been downgraded. It may lessen fears that the EU is about to break up; but it will also make European leaders less worried about the economic damage from a Brexit they see as a self-inflicted wound.

The odds are that EU leaders will decide in October that not enough has been done to begin future trade talks. That will mean a delay until November or even December, though officials say they can begin informal discussions anyway. The clock is ticking. Diplomats in Brussels put the chances of there being no deal before Britain leaves in March 2019 at around 50%. British business is talking of putting contingency plans into effect early next year. The next few months will be crucial. ■

gally when it arrived in 2012. The app now has 40,000 drivers and 3.5m users there.

Many Uber passengers accuse TfL of caving in to the cabbies, who are vocal lobbyists. But Gareth Edwards, a transport expert at the London Reconnections news site, is sceptical. Taxi drivers do not see TfL as a sympathetic regulator, he argues. Many still moan about a rule introduced last year that compels drivers to carry credit-card readers.

TfL is more fed up with Uber's habit of bending the rules. TfL has a legal requirement to ensure that its private-hire car operators are "fit and proper". Firms in other industries where this test is applied, such as finance, could face losing their licence if it emerged that they had failed to report a crime committed by a contractor. And allowing Uber to go on flouting the rules could eventually provoke legal action from other operators.

Under its previous boss, Travis Kalanick, Uber responded to clashes with regulators by lobbying politicians to overrule them, often calling upon its customers to join in. When TfL tried to tighten the rules under which Uber is regulated in 2015, the firm successfully lobbied the central government to intervene. It has already organised a petition of more than 800,000 signatures against TfL's latest move against it.

But it may have met its match. Most regulators that Uber has defeated have small budgets. TfL's is double Uber's global revenues. And unlike other taxi regulators, it is solely accountable to London's ambitious mayor, Sadiq Khan, who does not face re-election until 2020.

Mr Khosrowshahi plans to visit London to help negotiate a new licence. Mr Khan also wants to settle the dispute out of court. That may explain why cabbies have not got their hopes up too much. "They're a big company. They'll be back," one shouts, while overtaking an Uber car in the city. ■

Uber in London

Not 'appy

The cab-hailing company's strategy of bending the rules drives into a wall

THE taxi drivers of London are famous for their black cabs, pricey fares and outspoken political commentary provided to passengers at no extra charge. On September 22nd they were given a new subject on which to hold forth when Transport for London (TfL), the capital's transit authority, said it would not renew the operating licence of Uber, a ride-hailing app that cabbies loathe for poaching their fares. "Uber is the school bully finally going to the headmaster," cheers Steve McNamara of the Licensed Taxi Drivers' Association. But whether Uber will be banished from London's roads remains to be seen.

TfL cites several reasons for its decision. First is Uber's way of reporting serious crimes. London's police force has accused the firm of not reporting six sexual assaults promptly last year, including one case in which the driver continued to work and then attacked another passenger. Second is the company's approach to how drivers' medical and criminal-record checks are obtained, a point on which TfL does not elaborate. Third, TfL is not satisfied with Uber's explanation of how it uses Greyball, software with the capacity to hide information from regulators and law enforcers. (The company says it is not used for this in London, but there is evidence of its use to fool the authorities elsewhere.)

Uber's new boss, Dara Khosrowshahi, has admitted that the company has made "mistakes" in London. But the firm argues that TfL's case is overblown, pointing out that it already has a team that works with the police on investigating crimes related

to Uber rides, and that the medical and criminal-records checks are conducted by third parties. It has vowed to appeal against the ban and will continue to operate during that process, which could take a year. Even if it lost, it could keep driving by registering its drivers with a council outside London.

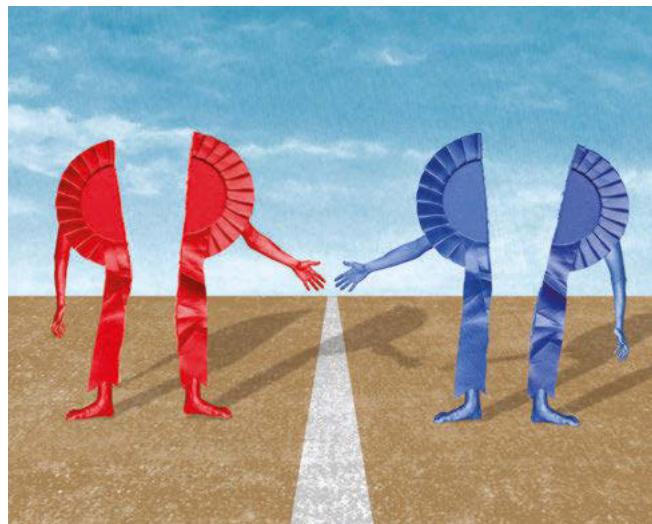
Still, the proposed ban has shocked many Londoners. Uber has never been kicked out of a market as important as London, which sits alongside Paris as its biggest in Europe. London is seen as one of the most politically open places to the controversial firm. TfL helped Uber to set up le-



Taken for a ride?

Bagehot | The four-party system

Labour and the Conservatives are both divided. Meet the new forces in British politics



THE election in June saw the return of two-party politics. Labour and the Conservatives increased their share of the vote to 82%, from 65% in 2005. Yet look a little more closely at the two great parties that are currently holding their annual conferences—Labour in Brighton this week and the Conservatives in Manchester next—and you see a more complicated picture. Under Jeremy Corbyn, Labour is divided into two sub-parties: a moderate Social Democratic Party and a socialist Corbynite Party. The Conservatives are an uneasy coalition of Whigs and Tories.

The Corbynite Party was in charge in Brighton. Most of the trade unionists and activists who filled the hall were Corbynites, and Momentum, the molten core of Corbynism, helped to put on a parallel conference, “The World Transformed”. Tom Watson, officially Labour’s deputy leader and unofficially one of the commanders of the anti-Corbyn resistance movement, even treated the conference to a rendition of “Oh, Jeremy Corbyn”, the favourite chant of the faithful, in an abject admission of defeat. But the Social Democrats were nevertheless in evidence. Blairite MPs walked the seafront with rictus smiles. Labour First, a moderate pressure group, complained loudly that the left had stitched up the conference by denying speaking roles to centrists, most notably Sadiq Khan, the mayor of London (the organisers eventually relented). One moderate complained that he felt like a stranger in his own party. The sort of people who used to stand outside the hall handing out leaflets were now inside.

The Corbynites and Social Democrats differ fundamentally on the meaning of the election, in which Labour dramatically increased its vote-share but fell 64 seats short of a majority. Len McCluskey, the leader of the pro-Corbyn Unite union, gave vent to the Corbynite interpretation when he told the conference that he was tired of “whingers and whiners” who point out that Labour didn’t win. “I say we did win. We won the hearts and minds of millions of people, especially the young,” he insisted. Mr Corbyn told a fringe meeting that Labour would have won outright if the campaign had lasted another week. On this analysis, the task now is to work harder at selling Corbynism to the people.

The Social Democrats, meanwhile, believe that Labour lost a winnable election by backing a candidate and a set of policies that stand far outside the mainstream. The psephological evi-

dence points in both directions. Mr Corbyn pulled off a remarkable feat by getting 40% of the vote. But his party is running neck-and-neck with the Conservatives in the polls, despite the fact that the government is doing its best to tear itself apart. A more centrist politician could be leading by double figures.

The Conservatives’ Manchester conference will be no less confusing. It will be shared by the Whigs, a cosmopolitan party that wants Britain to remain as close as possible to Europe, and the Tories, a nationalist party that worries about immigration and cultural change. The Whigs are mostly young and urban—David Cameron’s Notting Hill set writ large—while the Tories are older and rural. The Whigs think the Conservative Party must move with the times in order to survive, whereas the Tories think that moving with the times will mean surrendering everything they hold dear. Like the Corbynites, the Tories have numbers on their side. The Conservative Party enjoys impregnable majorities in places like Hampshire East, but has recently lost metropolitan beachheads such as Kensington and Battersea.

The Conservatives are just as divided over the meaning of the election as Labour. The Tories think that Theresa May’s strategy of advancing into culturally conservative working-class areas in the north was a brilliant idea badly executed. The party came close to winning a slew of Brexit-voting seats such as Bishop Auckland in north-east England. The Whigs agree that it was badly executed but think it was a foolish idea in the first place. By embracing social conservatism and little-England nationalism, the party alienated metropolitan Britain without breaking the working class’s tribal loyalty to Labour.

Conferences and after-parties

These divisions are not clear-cut. Some Conservative Brexiteers, such as Daniel Hannan, are radical Whig free-traders who liken the EU to the protectionist Corn Laws of the 1840s. Some of Labour’s chief Social Democrats, such as Mr Khan, have made a show of bending the knee to Mr Corbyn. The party conferences underline the fact that political parties are as much social organisms as political ones: an excuse to get drunk, have a good time and hang out with friends.

Yet Brexit is testing party managers’ skills to the limit. In government, the Conservatives cannot avoid making divisive decisions over Brexit. The party also contains a core of fanatics who have no intention of allowing the triumph of Brexit to be betrayed. Labour is also split. Mr Corbyn is cool on Europe partly because, as a socialist, he regards the EU as a constraint on policies such as nationalisation and partly because, as a party boss, he realises that many working-class Labour voters supported Brexit. By contrast, Labour’s Social Democrats are passionately pro-EU.

In Britain tribal loyalties usually trump ideological divisions. But occasionally ideological divisions prove too wide to manage, particularly when allied with economic interests. The Conservatives have split twice because of trade, first over the Corn Laws and then over imperial preference in the early 20th century. Brexit might yet prove to be just such a division. The Conservatives’ Whigs and Labour’s Social Democrats have far more in common with each other over Brexit (and much else) than they do with their parties’ radical wings. One of the big questions of the next year will be whether tribalism will prevail again—or whether the Whigs and Social Democrats can summon the courage to reach across the aisle and start voting as a block on the all-consuming question of Britain’s relationship with Europe. ■



The professionalisation of charities

Business principles

Non-profit organisations increasingly resemble for-profit ones. And some businesses are learning from charities

WITH 3,700 square metres of retail space, the Emmaus megastore on the outskirts of Preston, a northern English city, is the biggest charity shop in Britain. Customers wander among endless rows of sofas, testing the cushions and examining the other wares, from bric-a-brac to bicycles. Some staff are volunteers. Others were once homeless, and the £250,000 (\$337,000) the store makes a year goes towards their housing, training and food.

Charity shops increasingly resemble other retail outlets, with appealing layouts, professional customer service and managers who honed their skills on the high street. Indeed, all kinds of non-profit organisations have become more businesslike over the past few decades. This shift is global, says Lester Salamon of the Johns Hopkins Centre for Civil Society Studies. But it has progressed furthest in rich countries, where the non-profit sector (which we generally take to exclude hospitals, universities and religious groups) is a bigger part of the economy.

In the 1980s governments began to fund charities less through grants and more through contracts. The shift is continuing. According to the National Council for Voluntary Organisations (NCVO), between 2001 and 2015 the share of state funding of British charities that was in the form of contracts rose from 49% to 81%. The Economist's analysis shows that, of 12 American

government departments with plentiful data, ten increased the share of charities' funding that came through contracts over the same period. In 2010 the European Commission noted the same trend.

Bidding for contracts has forced charities to find ways to undercut or outbid rivals. Often, getting paid has meant hitting performance targets, such as finding work for 100 jobless people within a month. They have also had to employ more qualified staff. To win a contract to care for disabled people, for example, a charity would need to employ a certain number of staff with degrees in social work.

A further impetus to professionalise came from "voucher" schemes, in which governments provided tokens to be exchanged for services. That turned a charity's clientele into customers with choices. To woo them, it would have to make its offering sufficiently attractive.

With fewer grants, charities' income streams became less predictable. Many sought to smooth their revenues by selling more goods and services. In America in 1982, such sales made up 48% of non-profit income. According to Janelle Kerlin and Muhammet Coskun of Georgia State University, by 2013 that figure (which includes government contracts) had risen to 56%. The recession that followed the financial crisis accelerated the trend. Between 2008 and 2015 British charities' revenue from

selling goods and services to the public rose from 18% to 23% of the total, according to the NCVO.

Managers from mainstream retailing brought a fresh eye to charity shops, says David Borrett, the head of retail at Sue Ryder, a British charity whose thrift shops help fund its hospices. After an IT update, it now tracks how store layouts affect sales. Charity shops have started selling new items, too. These typically make up 20-30% of revenue. Belts and gloves are donated less often than trousers, so charity shops buy them in to "round off the offer", says Mike Taylor of the British Heart Foundation, another charity. And vintage gear, rather than always being sold in the shop that receives it, is now often shipped to youthful towns where it is in greater demand. The most valuable stuff, which might previously have mouldered on a cluttered shelf, is sold online, often via eBay for Charity, which has raised \$725m.

Charity cases

As the non-profit sector becomes more professional, young people are keener on qualifications tailored for it. According to Roseanne Mirabella of Seton Hall University, the number of courses at American universities in non-profit management and philanthropic studies rose from 284 in 1986 to 651 in 2016. Charity work is also becoming more popular among graduates who studied other subjects. In 1980, 8% of newly minted Masters in Public Policy from Harvard University's Kennedy School of Government took jobs in the non-profit sector. By 2015 that had risen to around 30%.

More MBAs are going into charity management. While studying at the Kellogg School of Management at Northwestern University, Matt Forti and Andy Youn ➤

► planned the One Acre Fund, a charity they launched in 2006 that lends to African smallholders so they can pay for agricultural training, equipment and high-yield seeds. Techniques from statistics classes helped them decide which interventions would increase harvests most. The contacts they made also proved useful. They raised about \$36,000 from classmates and teachers for the pilot programme, and still occasionally consult professors for advice before expanding into new countries.

Oversight, too, has become more hard-headed. In the 1990s newly rich tech workers started to join the boards of grant-making foundations in America. Some became involved in setting up non-profit organisations, nurturing them like startups in what some call "strategic" or "venture" philanthropy. The trend spread. The European Venture Philanthropy Association, founded in 2004, now has 210 members in 29 countries. David Fielding of Attenti, a London-based recruitment firm for non-profit executives, says he speaks to around ten financiers a week who want to be more active in the charity sector.

Spare some change?

Demand for trained fundraisers has grown rapidly, says Michael Nilsen of the Association of Fundraising Professionals, a trade group active in eight countries. Jen Shang of the University of Plymouth measures the effect of tweaks to marketing materials on donor satisfaction and future giving. She shares her findings with students in America, Britain and China. To attract a new giver, she has shown, a charity should emphasise the good it does. The focus should then switch to the donor. Rewriting a thank-you letter to say "your donation has saved children like Tera" instead of "we have saved children like Tera" can boost future giving by roughly 10%.

Another effective fundraising technique is to make giving feel like shopping. A charity that used to ask for money for poor African villagers may now invite a donor to buy them a goat. World Vision, a Canadian charity, has an online catalogue with dozens of gifts to send to impoverished places. The most popular is an alpaca, which costs C\$250 (\$204).

Fundraisers have also got better at courting big donors. Firms such as Factary in Britain and DonorSearch in America find links between philanthropists and a charity's trustees to help with setting up the crucial first meeting. A "steward", a kind of PR officer for high-value donors, keeps them on board by organising trips to see the charity's work and giving updates on its successes, says Elizabeth Ziegler of Graham-Pelton, a fundraising consultancy.

As charities have focused on results, they have sometimes overstepped the mark. Fundraising practices were called into question in Britain after the suicide in

2015 of Olive Cooke, a generous charity volunteer and donor. Data-sharing among fundraisers meant she was bombarded with begging letters. Though it is not thought that these caused her suicide, her family has said they greatly distressed her. Her death alerted the sector to the problem, says Peter Lewis of the Institute of Fundraising, a trade group. Later that year, after a government inquiry, a new code of conduct banned charities from passing on donors' data without express permission. Charities across the EU will face similar rules from May 2018.

Charities have also been criticised for raising executive pay closer to business levels. Tax data show that between 1988 and 2014 the pay of senior management in American non-profit organisations (including hospitals and universities) rose twice as fast as that of other staff—and twice as fast as total expenditure. According to the *Wall Street Journal*, in 2014 about 2,700 American non-profit executives earned more than \$1m a year. (Most of these ran big hospital groups or universities; a few were megapreachers.) Though an effective boss can be well worth a high salary, some volunteers and donors find such high remuneration a turn-off.

One of the biggest remaining differences between charities and businesses is in access to capital. Unlike a business, a charity cannot sell shares. But few have steady income streams or valuable assets against which to borrow. New types of charitable financing are starting to fill the gap. "Impact investing", in which the promised return is a philanthropic outcome as well as (or instead of) a financial one, has boomed in recent years. For example, the W.K. Kellogg Foundation has backed Acelero Learning, an early-years education firm, and Revolution Foods, a company in California that serves healthy

lunches in schools in hard-up areas.

Another idea is for a third party to guarantee a charity's loan. In 2014 Root Capital, a non-profit organisation that lends money to farmers, needed cash for a programme to help coffee growers in Latin America. USAID, the international development arm of the American government, gave it a loan guarantee worth \$15m. If Root borrowed money and could not pay it back, USAID would make up some of the difference. Without the risk of default it was able to borrow \$12.5m, including from the Ford Foundation and Starbucks.

Loans to charities, like those to firms or individuals, can also be split into different tranches. The slice with the highest risk and lowest returns can be taken by foundations or government agencies. This makes the remaining slices more attractive to private lenders. Though such innovations are promising, they remain a rarity.

More businesslike charities should be better equipped to survive and thrive. They should also do more good. A literature review in 2014 by academics at the Vienna University of Economics and Business found numerous studies showing that better-qualified managers were associated with higher and more stable revenues. But charities also face new competition from a surprising source: the rise of the charitable business.

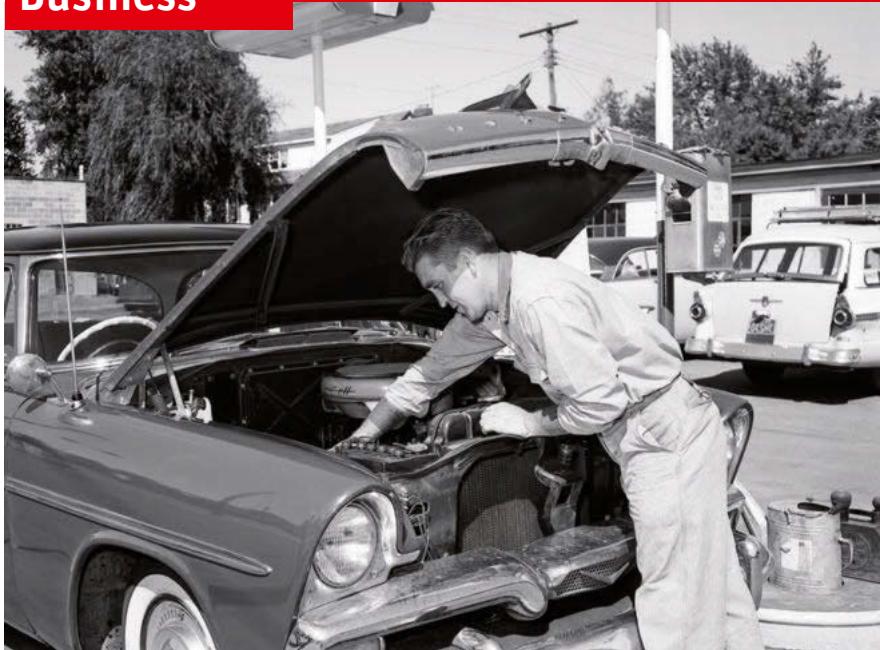
In America corporate philanthropy doubled in real terms between 1990 and 2015, to \$18bn. A study of 20 European countries showed that corporations gave about €22bn (\$26bn) in 2013, more than foundations did. Though much of this flowed through charities, it establishes businesses, in their customers' minds, as entities that can have charitable aims.

A "fourth sector" (after public, private and voluntary) is springing up, consisting of organisations that straddle the line between business and charity. They call themselves "low-profit limited liability companies", "social enterprises" and other names. These range from builders that seek to make a profit from housing poor people to fashion labels that employ disabled people to design and sell handbags. A report from the European Parliament suggests there are 200,000 in Britain, France, Spain, Italy and Poland. Over 2,000 B-corps, for-profit outfits that meet certain standards for do-gooding, have been launched in more than 50 countries.

Profiting from purpose

Many charity workers welcome this. The more minds thinking about how to improve the world, the better. Some fear, though, that if the line between charities and businesses fades further, donors and volunteers may become less willing to give away their money and time. But a charity that learns from business how to do good better should be able to persuade them. ■





Tinkering in the digital age

If it's broken, you can't fix it

Software is making things harder to mend. Some are calling for a "right to repair"

AS DEVICES go, smartphones and tractors are on the opposite ends of the spectrum. And an owner of a chain of mobile-device repair shops and a farmer of corn and soyabeans do not usually have much in common. But Jason DeWater and Guy Mills are upset for the same reason. "Even we can no longer fix the home button of an iPhone," says Mr DeWater, a former musician who has turned his hobby of tinkering into a business based in Omaha, Nebraska. "If we had a problem with our John Deere, we could fix it ourselves. No longer," explains Mr Mills whose farm in Ansley, a three-hour drive to the west, spreads over nearly 4,000 acres.

Messrs DeWater and Mills have more and more company. It includes not just fellow repairmen and farmers, but owners of all kinds of gear, including washing machines, coffee makers and even toys. All are becoming exceedingly difficult to fix—which has given rise to a movement fighting for a "right to repair". In America the movement has already managed to get relevant bills on the agenda of legislatures in a dozen states, including Nebraska. Across the Atlantic, the European Parliament recently passed a motion calling for regulation to force manufacturers to make their products more easily repairable.

Some types of gear, such as photocopiers and medical equipment, have always been hard to mend because of their

internal complexity. But what has been the exception is now becoming the rule, says Nabil Nasr of the Rochester Institute of Technology. Even a John Deere tractor comes with millions of lines of software code, controlling everything from the engine to the armrests. Mobile devices, for their part, are getting ever more densely packed to make them smaller and able to accommodate new components. When iFixit, a website for repair information, analysed Samsung's Galaxy Note 8, which started shipping on September 15th, it found that the device was mainly held together with glue. This gets rid of fasteners, but makes repairs more difficult.

Manufacturers are also increasingly erecting less tangible barriers to mending. Leased equipment and devices under warranty have always been out of bounds, but firms now regularly ban tinkering with a product's software. In its "License Agreement for John Deere Embedded Software", for instance, the company retains ownership of the software programs. It also refers to the Digital Millennium Copyright Act, a controversial piece of legislation that makes it illegal for customers to circumvent copy protection. But dodging it can be necessary to develop diagnostic tools for electronic devices.

Firms also withhold technical information, proprietary repair tools and spare parts. Mr DeWater has to rely on manuals

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from iFixit, on self-made tools and on refurbished or copied parts. He can also tap into a global network of repair shops which exchange information about how to fix the latest mobile devices. "We sometimes even ship a device to China if we know that a shop there can fix it," he says.

In the future, repairability is likely to become even more of an issue, says Kyle Wiens, iFixit's chief executive. Not only do firms want customers to use authorised dealers, but a growing number of products are also no longer stand-alone devices, but rather delivery vehicles for services that generate additional revenues. Smart speakers such as Amazon's Echo are a case in point. The e-commerce giant may even lose money with the device, but it helps to sell other products and collects reams of data about users. These can be used for additional services or to target advertising.

Strings attached

Similarly, wearable technology such as fitness trackers would be much more expensive to consumers if manufacturers did not believe they could monetise the data they collect. If owners could easily tinker with such devices, that could sever the profitable links between product, service and data, which may make manufacturers guard them even more jealously.

In their defence, firms say that restricting repairs, whether by individual consumers or businesses, helps protect their intellectual property and works on behalf of buyers. Apple, for instance, wants to ensure that consumers do not get hurt by breaking glass from badly installed screens, for instance. If Apple alone can replace the home button, it is to stop hackers from getting familiar with the system that reads people's fingerprints to unlock the phone. Highlighting the dangers, research-►

ers in Israel recently managed to fit smartphones with booby-trapped screens, which could be used to log keyboard input and install malicious apps.

Yet the lack of repairability has large drawbacks. Authorised dealers are often far-flung, much more expensive than independent ones and often cannot fix a problem. Barring owners from tinkering also limits innovation. Many inventions in farming equipment, such as circular irrigation systems, were pioneered by farmers. And not being able to easily mend a device, says Mark Schaffer, a manufacturing consultant, contributes to a problem that already plagues many markets, as more products, from smartphones to washing machines, are thrown away rather than repaired, adding to waste and pollution. The share of new appliances sold to replace defective ones (as opposed to first-time purchases) in Germany increased from 3.5% in 2004 to 8.3% in 2012, according to the Öko-Institut, a think-tank. Washing machines, in particular, are hard to fix. The most common problem is that their bearings fail; when these are sealed away in the drum, repairers cannot access them.

To reverse the trend, but also to defend its industry's turf, the Repair Association, a lobby group funded by repair shops as well as by environmental organisations and other charities, wants states in America to pass "right to repair" laws. These would require firms in all industries to provide consumers and independent repair shops with the same service documentation, tools and spare parts that they make available to authorised service providers. The hope is that once an important state passes such a law, the country will follow—as was the case in the car industry after Massachusetts in 2012 passed a right-to-repair law for cars that led to a national memorandum of understanding between carmakers and repair shops.

If no bill has been passed yet, it is because the Repair Association has faced stiff resistance from manufacturers. Apple's strategy here is two-pronged. It has sent a lobbyist to Nebraska, who reportedly warned local politicians that the legislation would make armies of hackers relocate to the state. At the same time, it has made (largely symbolic) concessions—in June it announced that it would send 400 screen-fixing machines to authorised repair shops, so they no longer have to send broken iPhones to central repair facilities. It is also investing in technology that makes it easier to recycle its products, such as Liam, a robot for disassembling iPhones.

Whether such moves will take some steam out of the right-to-repair movement remains to be seen. More likely, it will gather pace. In France, with its penchant for regulation, "planned obsolescence", meaning designing a product for a limited lifespan, is already an offence punishable by up to

€300,000 (\$354,000) or up to 5% of the maker's average annual French sales, whichever is higher. Manufacturers must also tell buyers how long their products are likely to last. The government hopes that both rules will push firms to make devices easier to repair.

Spanner in the works

The global assault on repairability highlights a bigger problem, says Jason Schultz of New York University: what it means to own things in the digital age. Together with Aaron Perzanowski of Case Western Reserve University, he has written a book, "The End of Ownership", which describes the many ways in which firms now limit what people can do with the stuff they buy, in particularly the digital sort. "Owners" are often not allowed to resell it, transfer it to another device or mash it up with other digital goods.

Companies have even started to limit what buyers can do with physical goods.

Tesla, for example, does not allow its self-driving cars to be used to make money with ride-sharing services such as Uber and Lyft (apparently because the firm plans soon to launch its own such service, called "Tesla Network"). It will be interesting to see what happens if Tesla takes steps to enforce this anti-Uber rule.

At any rate, the watering down of ownership appears to hit a nerve both on the left and the right. "Repair isn't a partisan issue," says Gay Gordon-Byrne, executive director of the Repair Association, pointing out that the right-to-repair bills have both Republican and Democrat sponsors in most states. The two Nebraskans, Messrs DeWater and Mr Wills, give an idea of why this may be. One, a liberal, sees the livelihood of repair shops endangered by big corporations. To the other, more conservative, not being able to repair his tractor amounts to an attack on the "very idea of private property". Together they make a powerful coalition. ■

Entrepreneurship in America

Gazelles in the heartland

NEW YORK

American entrepreneurship is flourishing, if you know where to look

AT FIRST glance, it seems that America's economy is losing its mojo. Many economists, most notably Robert Gordon of Northwestern University, have lamented that productivity growth seems to be anaemic when compared with earlier golden eras (see *Free exchange*). A gloomy chorus of business leaders has echoed what media outlets have by now turned into a mantra, that American entrepreneurship is in steady decline. Surely America's overall competitiveness, then, is plummeting?

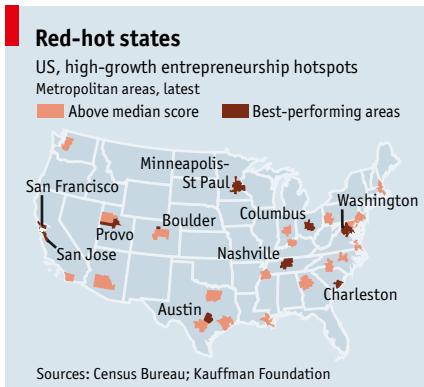
The answer from one influential think-tank, the World Economic Forum (WEF), is

no. In its latest update to its long-running annual ranking of global economic competitiveness, published on September 27th, America rose from third place to second, ranking below only Switzerland.

This is partly because poor economic policies and weak productivity growth are bedevilling rivals such as China and Europe. Yet glaring American weaknesses, such as fraying infrastructure and fractured politics, are outweighed in the WEF analysis by the country's strengths in areas like business sophistication and technological readiness. And aside from market size, the variable on which America still outscores ►



It's hard to keep them down for long



► other rich countries the most is its culture of innovation and entrepreneurship.

Hand-wringing about a crisis in business formation relies on official data showing that fewer new firms are being started than in the past. The latest figures, released on September 20th, show that there were 414,000 firms that were less than a year old in 2015 (the latest available year), compared with an average of 511,000 in the decade before the financial crisis. Still, not every new firm is equal—some entrepreneurs want to create the next Tesla, not open another bodega. Of the roughly 4.4m firms created in the last ten years, about 30,000 can be described as gazelles, or young, high-growth companies, according to the Kauffman Foundation, another think-tank that is known for its work on entrepreneurship. These firms have a disproportionate impact on job creation and innovation. They pack a powerful punch.

A forthcoming report from the Kauffman Foundation finds that high-growth entrepreneurship has rebounded in America from the trough induced by the global financial crisis and is now rocketing (see chart). These experts scrutinise three things: how quickly startups grew in their first five years; the share of firms scaling up past 50 employees by their tenth year; and the prevalence of “fast growth” firms with at least 20% annualised growth over three years (and \$2m or more in revenues).

The analysis also reveals that such gazelles are found in unexpected places. Consider ProviderTrust, a health-tech startup. The firm has developed a novel software-as-a-service offering that helps health-care firms track people's professional credentials and licences efficiently. Because states do not typically share timely information about disciplinary actions taken against health-care workers, footloose rogues can create a costly regulatory headache for unwitting new employers in another state. The company has been growing at a rate of over 60% a year since its founding in 2010; revenues should reach \$10m this year.

Or look at Root Insurance, America's first mobile-only insurance firm, which is increasing downloads of its app by nearly 50% month over month. It uses actual driv-

ing data to set insurance rates for all of its customers, and offers discounts to drivers for using the self-driving mode of their Tesla car. Alex Timm, its chief executive, explains that data collected via its customers' mobiles proves that people are much safer when the car does the driving. His firm even punishes drivers for texting and driving, which it discovers by analysing the micro-vibrations of smartphones.

These gazelles are found not in Silicon Valley or Boston but, respectively, in Nashville and Columbus. Other overlooked cities in the American heartland are also hotspots of high-growth entrepreneurship (see map). Mark Kvamme of Drive Capital, a venture-capital (vc) fund based in Ohio, points to Indianapolis as a rising technology hub: ExactTarget, a local software-marketing startup, was acquired in 2013 by Salesforce, a Californian software giant, for \$2.5bn. “Luring talent away from Silicon Valley and Seattle is getting much easier,” says Mr Kvamme, a native Californian who left Sequoia Capital, a top Silicon Valley vc fund, to found Drive.

Steve Case of Revolution, an entrepreneur turned venture capitalist (in 1985 he co-founded what later became America Online), calls this the “rise of the rest”. Having observed this trend on periodic bus tours across America, during which he encourages (and sometimes invests in) many local entrepreneurs, he thinks three factors are fuelling it. Barriers to entry have fallen, especially for technology companies. Access to risk capital for startups, including through crowdfunding, is no longer limited to the two coasts. Local governments are increasingly supporting training schemes, accelerators and other bits of soft infrastructure that greatly boost startups’ chances of success.

Challenged on whether high-growth entrepreneurship can really be spread like jam across America, Mr Case acknowledges there is value to clustering. He insists, however, that nearly three quarters of all vc money need not go to just California, Massachusetts and New York. “Spreading this to 30 cities”, he reckons, “would transform America.” ■



Yandex

Silicon Valley by the Moskva

MOSCOW

Russia's biggest technology company celebrates 20 years

ARKADY VOLOZH, the bearded co-founder of Yandex, Russia's largest search engine, bristles at his company being branded the “Google of Russia”. Far from emulating the American firm, Yandex launched in 1997, a full year before Google, he points out. More crucially, the moniker poorly describes what Yandex offers today, which is a group of products and services that includes taxis, shopping, payments, music and education. “Really we're the Silicon Valley of Russia,” says Mikhail Parakin, Yandex's chief technology officer.

That may only be a slight overstatement. Yandex's Russian presence is immense; it accounts for just over half of the search market and 61% of online advertising, and its sites attract over 60m visitors each month. Like American tech giants, it is also expanding its offline logistical capabilities, signing recent deals with Uber, a ride-hailing firm, and with Sberbank, Russia's largest bank, to build out its transportation and e-commerce businesses.

Yandex doubled down on its home market, which accounts for 92% of its revenues, after a failed foray into Turkey soon after listing on NASDAQ in 2011 (when it raised \$1.3bn). “You either go global in one service which you feel good about, or you focus on one market and do it really well,” says Mr Volozh. Russia already has Europe's largest base of internet users—some 87m people—yet penetration rates are low at 71%. Along with the space to grow, however, comes the risk that Yandex's activities attract greater political scrutiny. President Vladimir Putin paid a visit on September 21st, around its 20th anniversary, having criticised the company in past years.

Its early lead online came thanks to technology that responded to local needs. The Yandex search algorithm processed Russian language requests better than early versions of international competitors, for example. Mapping software that displayed real-time traffic proved immensely popular, especially among drivers on Moscow's highly congested roads.

There were also challenges. As Russia fell into recession in 2014, profits began tumbling; the depreciation of the rouble in late 2014 hit especially hard, as a large chunk of Yandex's costs are in foreign currency. Google began eating away at its search business by dominating the fast-growing mobile market on Android devices. But as macroeconomic conditions have improved, investors crept back. ►

► A victory against Google in a Russian antitrust court this year (the American firm must stop requiring Android phone makers to install its apps and services and instead offer Android users a choice of default search engine) as well as signs of successful diversification beyond search have pushed Yandex's shares up by some 50% in the past year. Investors are particularly bullish on its taxi business. In July Yandex agreed a \$3.7bn merger with Uber, which effectively ceded the Russian market after a costly price war. Yandex will take

a controlling 59.3% stake in the new enterprise. A second joint venture is in the works with Sberbank, which aims to transform Yandex's price-comparison platform into a fully-fledged e-commerce business.

Other initiatives support Yandex's vision of itself as the hub of Russia's digital economy. A new machine learning-powered virtual assistant, Alisa, aims to conquer the Russian-language sphere, where Amazon's Alexa does not operate and Apple's Siri can be spotty. An early version that used Russian literary classics as a

training data set was scrapped because it was so depressing, says Mr Parakhin. "You had the feeling that after it stops talking it'll go and commit suicide!" But a revamped model will launch in October, voiced by the actress who dubbed the Russian version of "Her" in Spike Jonze's hit film.

As for politics, the firm has long trod a tightrope, drawing the Kremlin's ire over its mobile-payment system, which opposition politicians have used for fundraising, and its popular news aggregator, which serves up stories based on an algorithm rather than the interests of the authorities. In 2014, as tensions between Russia and the West intensified over the annexation of Crimea, Mr Putin declared the internet a "CIA project" and singled out Yandex for being susceptible to foreign influence. The company's stock promptly fell 5%.

Since then, Yandex has made overtures to the authorities. Its maps now show Crimea as part of Russia, for example. This spring, Alexei Navalny, leader of the opposition, accused Yandex of manipulating news results to exclude mention of mass protests he led (Yandex has denied the charges). On his visit to the firm, Mr Putin watched a demonstration of Yandex's self-driving car and chatted with Alisa. Inside Yandex's glass-walled offices, among its talented young employees, Russia's future must have looked bright. ■

McDonald's in India

Not lovin' it

DELHI

An entrepreneur's intrepid campaign to keep the home fries frying

IN MOST ways the McDonald's outlet in Jangpura, a gentrifying neighbourhood in south Delhi, looks like one anywhere else, with bright displays, plastic seating and a familiar menu. But this week a disconcerting sign warns that "unpredictable" conditions have affected tomato supplies; none are available. Not bad though for a store that McDonald's has been trying to close since September 6th. Over a third of its 400 or so outlets in India were supposed to shut their doors then—yet nearly all are still slinging McSpicy Paneers to customers.

War rages between McDonald's India and Vikram Bakshi of Connaught Place Restaurants Limited (CPRL), who first brought the American chain to India in 1996 as a local partner in a 50-50 joint venture, starting in Delhi (along with another franchisee, Hardcastle Restaurants, which went into the southern and western states). Over the next two decades, Mr Bakshi expanded in the north and east. In 2008 McDonald's tried to buy out Mr Bakshi's share for \$7m, but he had evidence from an accounting firm that his stake was worth \$331m.

From his upstairs office in a residential colony near the Jangpura store, Mr Bakshi has been giving hell to the world's biggest restaurant chain. In 2013 McDonald's had him ousted as CPRL's managing director. He sued to be reinstated, then sued to have his stake revalued, and again to keep control of 169 branches without interference from the mother ship.

When McDonald's tried to take him to the London Court of International Arbitration (LCIA) in December 2013, he complained of "oppression and mismanagement" to an Indian national tribunal and won a reprieve; only in 2016 did another Indian court allow the chain's case to proceed to the LCIA. Mr Bakshi is now trying his luck with an appeal to yet another court, the National Company Law Appellate Tribunal. The battle illustrates multinationals' worst fears about India, from the instability built into the joint-venture model to the ease of stymieing legal judgments.

The prospects for McDonald's in India look appealing, thanks to expanding middle classes. But Mr Bakshi's chain all but ceased growing since he crossed swords with the golden arches. He shows no signs of giving up. Now his hope is that the appellate tribunal will find in his favour on the LCIA case after a hearing due on October 25th.

Meanwhile, McDonald's seems to be taking matters into its own hands and squeezing Mr Bakshi's suppliers. Jangpura's ketchup comes from Cremica Food Industries in Punjab. Cremica stopped shipping to CPRL in August (it will not say why). Over the approaching holiday weekend of Dussehra, a Hindu festival, the restaurants should see their heaviest footfall of the year. McDonald's worst fear must be that Mr Bakshi will find a way to carry on for months or years using its brand. But no tomato, then no ketchup. These are formidable weapons.



Bakshi gives McDonald's the shakes

Nestlé and L'Oréal

Because it's worth it

PARIS

An old shareholder pact is rocked by the death of Liliane Bettencourt

DEATH does not end all uncertainties. News that Liliane Bettencourt, a glamorous 94-year-old Parisian heiress, died on September 20th has provoked a flurry of investor speculation over L'Oréal, the world's biggest cosmetics company. She had held a controlling stake in the firm her father, an inventor of hair dyes, founded in 1909. Its market value has since grown to be a whisker short of €100bn (\$117bn).

Her death brings few immediate consequences. An Alzheimer's sufferer, she had been declared legally unfit to manage her concerns. That followed a scandal, made public in 2010 after her butler secretly recorded politicians, lawyers and friends as they bilked her for millions of euros. The case still haunts Nicolas Sarkozy, an ex-president. He seethed in October that opponents had stymied his return to politics by repeating allegations he profited from the "sordid Bettencourt affair" (he was cleared of charges over it in 2013).

One nurse of Ms Bettencourt likened ►



A face of the firm

► her household to a “basket of crabs”, as staff and others battled to pinch her wealth. The drama eased in the past six years after her daughter took control of the family assets, including the one-third stake in L’Oréal. The family affirmed, on September 21st, their “entire commitment and loyalty to L’Oréal” and its chief executive, Jean-Paul Agon.

That suggests no big changes are looming at the firm, which is considered a *fleuron*, or ornament, of France’s corporate scene. It is certainly flourishing under Mr Agon. L’Oréal’s share price has almost doubled in the past five years. It earned strong operating profits of €4.5bn last year, on sales of €26bn, and expects that profits this year should reach a record 18% of sales.

Investors are watching one matter closely—whether relations now change with Nestlé, the world’s biggest food company. It holds a 23.2% stake in L’Oréal, the result of a deal Ms Bettencourt struck in the 1970s to fend off Socialist politicians she feared could nationalise the family firm. Recurrent speculation suggests that Nestlé, which reduced its stake once already, could divest entirely—or might decide to bid for L’Oréal outright. The deal lets either side increase ownership of L’Oréal only six months after Ms Bettencourt’s death.

In the event, the news came just before Nestlé’s newish chief executive, Ulf Mark Schneider, was due to offer his plans to investors for the first time, on September 26th. Shareholders have long quipped that the seller of Nescafé, KitKats and Purina pet food has grown stale and lament its loss of market share to fresher rivals. Pressure has risen further after an activist hedge fund, Third Point, in June said it had bought a \$3.5bn stake in Nestlé.

Mr Schneider set a goal of achieving profit margins of 17.5% to 18.5% by 2020, speeding up share buy-backs and lifting sales of fast-growing products (mostly caffeine-related). The activists wanted all that,

but he bluntly refused their demand also to sell the L’Oréal stake, which they say has no part in the firm’s strategy. Mr Schneider retorted that the stake constitutes a “fabulous” investment, generating an average of 12% annual returns in the past 42 years.

Politics would probably not get in the way of buying L’Oréal outright. France’s strongly pro-European president, Emmanuel Macron, would struggle to oppose a purely European takeover. And other conglomerates show an appetite for beauty. Unilever, an Anglo-Dutch behemoth, is shifting its portfolio from food to faster-growing categories such as shampoo and skin creams. On September 25th it said it will buy Carver Korea, a Korean beauty firm, for €2.27bn.

Yet for Nestlé, taking over L’Oréal would be a financial stretch, and looks impossible without the Bettencourts’ agreement. They show no sign of wanting to sell. The French firm might be willing to do the opposite, buying out the Nestlé investment, for example if it raised funds by selling its own €10bn stake in Sanofi, France’s biggest drugmaker. The domino effect of undoing the Nestlé-L’Oréal pact might mean even more uncertainties ahead. ■

Non-voting shares

Social classes

NEW YORK

A cancelled proposal by Facebook sheds light on share ownership

ONE group of Facebook friends that Mark Zuckerberg recently decided were not worth hanging out with were its public shareholders, who expected to cross-examine him (via a lawyer) on September 26th in a Delaware court. At issue would have been Mr Zuckerberg’s plans to refashion the social-media firm’s share-ownership structure more in his favour.

There is not a scintilla of doubt over who controls Facebook. Not only does Mr Zuckerberg, its founder, serve as its CEO and chairman; owning 16% of its shares, he controls 60% of the voting authority through a special class of stock with ten times normal voting rights. A year ago, Mr Zuckerberg decided he would like to sell a large slug of his holdings (worth \$74bn) without diluting control. The firm made a plan to distribute non-voting shares enabling him to reduce his economic interest to 3% without affecting control.

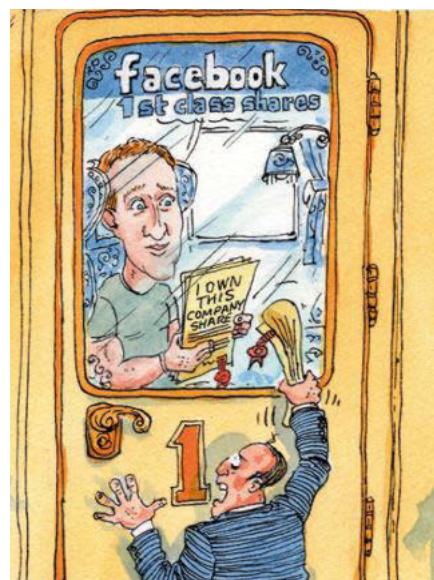
That prompted litigation. Shareholder votes can be directly meaningful on many issues, including management pay and acquisitions, and indirectly meaningful, too, because these votes require the release of often important information, says Stuart

Grant, a lawyer. He sued Facebook and Mr Zuckerberg on behalf of two of the company’s large investors for a breach of fiduciary duty. But shortly before the trial Mr Zuckerberg dropped the plan, posting on Facebook that he believed he had sufficient control regardless. He also probably wanted to avoid an extra fight amid controversy over Russians using Facebook to meddle in America’s presidential election.

There was a time when ideas surrounding shareholder “democracy” created a vocal constituency for each share equating to one vote on corporate matters. This was a matter of contractual agreement under the rules of the New York Stock Exchange. The exchange’s rise to pre-eminence in the early twentieth century was tied to listing standards that enhanced investor confidence. But its authority has since withered away. It now offers no opinion on the subject of multiple share classes other than that they are permitted by its primary regulator, the Securities & Exchange Commission (SEC). Indeed, because the SEC does not block the issuance of non-voting shares, Mr Zuckerberg could well have won the case.

The NASDAQ, where Facebook is listed, defends multiple classes on principle, arguing that a share need only reflect an economic participation. Various structures are acceptable as long as shareholders know what they are buying, notably at the time of a public offering. If rules were tightened, it believes, firms would forgo listing altogether for less pernickety private markets.

Whatever merits this argument has, it does not quite cover the Facebook case: the change was to be made after the firm had gone public. Other firms have been taking a similar approach to their shares, either limiting investor voting rights, such as Under Armour, a clothing manufacturer, or offering shares with none, such as Snap, another social-media firm. But poor results at ►



► both firms have raised doubts about investors' tolerance for buying into similarly-structured offerings.

Yet it does not amount to a meaningful mood shift on multiple share classes. If Airbnb, a home-sharing giant, wants them if it goes public, for instance, it will likely prevail; then others will. If a line is being drawn, it is not by regulators, but index-providers. Standard & Poor's and FTSE Russell both said in July they would restrict firms with multiple share classes from their benchmark indices; MSCI is weighing a similar move. So future offerings may be defined not by exchanges or regulators, but by entities that merely describe collections of firms. Until then, shares of common stock, to use a precise though rarely used term, may have less and less in common. ■

Rivigo

The Indian pony express

GURGAON

Technology is helping the Indian truck-driving industry out of a jam

THESE are 36 gradations in India's archaic caste system, from the priestly to the supposedly untouchable. And then, somewhere below that, are the long-haul truck-drivers. Plying the subcontinent's potholed highways for weeks at a time, few can settle into anything like a home life. Their marriage prospects are grim; venereal diseases and sore backs from sleeping in cramped cabs are but two occupational hazards. Despite an oversupplied national job market, the industry has struggled to attract the roughly 1m new drivers it needs each year to keep everything from Amazon packages to car parts moving. Can technology help?

To fend off shortages, most truck owners have done precisely what economists suggest, which is to increase pay. Drivers can now command nearly 40,000 rupees (\$610) a month, a decent white-collar wage—and not far from double the level of trucker pay just three years ago. Rivigo, a startup based in Gurgaon, an industrial city near Delhi, is using a different road map. Since its founding in 2014, it has set up a network of 70 "pitstops" across India, each around 200-300km down the road from each other. From those, it organises a pan-India relay system, where drivers ply the four- to five-hour journey from their "home" station to the next. They then drive back to their starting point in another vehicle, and clock off in time to make it home for supper most nights. Another colleague is then responsible for driving the load to the next waypoint, and so on.

Administering this logistical ballet is no

simple task. Clever software predicts precisely when trucks will arrive and leave pit-stops and which petrol stations they might refuel at most cheaply. A trip from Bangalore to Delhi takes eight different legs. But by keeping the truck on the road more or less permanently, it takes a mere 44 hours to cover the distance of 2,200km, compared with the 96 hours a conventional trucker would take once rest breaks, meals and so on are factored in.

Rivigo claims it has no trouble hiring drivers for the roughly 2,500 trucks it now owns and operates. At a pitstop two hours south of Delhi, Naresh Kumar, a "pilot", as Rivigo dubs its drivers, says he misses little from his decade of pan-India trucking before he joined the company two years ago. "From being home once or twice a month, I'm now home most nights," he says. Because most of Rivigo's driving staff live near pitstops in rural areas between cities, it can pay them much less than truckers who live in cities and command an urban-dweller's premium. Its monthly salaries are nearer the 23,000 rupee mark.

In one way Rivigo's approach is unusual for a startup. It is busy accumulating assets—those pitstop facilities and trucks—at a time when asset-light platforms matching service users with existing asset-owners are all the rage. Deepak Garg, the founder, had originally mulled launching an "Uber for trucking"; as a former McKinsey management consultant, he might be expected to. But the plethora of small-time operators running anything from one to 20 trucks didn't bite. "Their problem wasn't demand, it was finding drivers," he says.

Rivigo may yet go down an Uber-like road. Mr Garg says that within a few years he wants Rivigo to be out of the business of owning its own trucks, and focused instead on organising the relay for whichever trucking firm wishes to participate in it. The pitstop network, he says, cost a mere

\$30m to set up, a fraction of the \$115m it has raised from investors such as Warburg Pincus and SAIF Partners, two private-equity firms. Rumours are swirling of a whopping \$200m investment round led by SoftBank, a Japanese telecoms and internet group, which would turn Rivigo into a rare business-to-business "unicorn" startup valued at over \$1bn.

Such a lofty valuation raises the possibility of far more competition. The concept of a relay is hardly new: the Pony Express used it to deliver mail in the American West before the advent of the telegraph. If relay is 15% cheaper than conventional trucking, as Mr Garg claims, others will cotton on. Rivigo has sped to an annual revenue of nearly \$200m in just three years. DHL, a global logistics firm, has mulled a similar approach in India. Conversely, Mr Garg thinks his "relay as a service" concept might have applications in other parts of India's logistics markets—or overseas.

First, Rivigo will have to navigate transformation in India's domestic logistics industry, which is worth around \$300bn a year. A newly-introduced goods-and-services tax has unified what were 29 disparate states into a single market for the first time. While companies tended to need a warehouse in each state, most are now looking at fewer, bigger locations instead. That will mean larger trucks, longer journeys and less time stuck at internal borders (or paying bribes to speed through).

Investors are ploughing money into the sector, and some new firms may tread on Rivigo's toes. The opportunity is large, and growing, for spending on logistics is increasing at roughly double the pace of growth in GDP, which even in a bad year means double-digit increases. Mr Garg speaks of the efficiencies of the relay system with evangelical zeal. Will other firms pick up the baton? ■



Time to freshen up the model

Schumpeter | Uneasy accommodation

The business world is obsessed with disruption. It hasn't had much impact on profits yet



LAST week Schumpeter met two tech tycoons who control businesses in total worth \$600bn. In both cases the mayhem around them was what you would expect if Beyoncé hit town, minus the musical talent and looks. Hotel floors were locked down by the official secret service; the corridors were crammed with lines of petitioners and in one case a Wall Street boss gate-crashed the room in order to hug his idol.

The message from both titans—you ain't seen nothing yet—was imperious. Over the next decade, they say, conventional industries will face an onslaught from tech competitors wielding vast financial resources, new technologies and massive reserves of data. It is a view that has swept through traditional firms' boardrooms, too, where enthusing about virtual reality and singing the praises of Jeff Bezos, Amazon's boss, is almost obligatory. The notion of disruption, with its promise to destroy the status quo and then renew it, is the most fashionable idea in global business since the craze for emerging markets over a decade ago.

Yet there is a puzzle at the heart of the orthodoxy. Few bosses, in public or in private, expect their own firms to decline, and hardly any American companies are valued by investors as if their profits will fall. The tech revolution, it seems, will be momentous, but harmless, with no corporate victims. Something does not add up.

If disruption is defined as conventional firms being clobbered by digital ones, there is certainly some of it about. This month Toys "R" Us went bankrupt, joining many clothing and hardware retailers felled by e-commerce. On August 23rd shares in WPP, an advertising firm, slumped after it said clients were cutting spending partly because of technological change. A few days later Amazon closed its acquisition of Whole Foods, a food retailer, and cut its high prices, spreading fear in the supermarket industry's aisles.

At least six conventional industries have been eviscerated by digital innovation in the past two decades—music, video-renting, books, taxis, newspapers and clothes retailing. In financial terms the survivors are shadows of their former selves. The New York Times Company's profits are 67% below their peak. It is a similar story at Barnes & Noble (76%) and Universal Music (about 40%).

But these firms and their peers were never large. In 1997, when Mark Zuckerberg was 13 years old and the six industries were in

their prime, they accounted for 2% of the profits of the S&P 500 index of big American firms. The toll that digital disruption has taken so far on overall earnings is thus tiny. Across America's economy profits are high and stable relative to GDP.

If technological disruption was about to inflict a new and more devastating blow on traditional firms, you would expect to see lots of them with miserly valuations, as investors discounted a slump in their profits. Yet such firms are uncommon. Only about 40 companies in the S&P 500 have a price-earnings ratio of less than 12, which is a sign of imminent decline. That is similar to the share two decades ago and half the number of ten years ago.

Only two industries are priced for devastation. General Motors and Ford are valued at just seven times profits. Investors expect Tesla, a manufacturer of electric cars, to steal market share, and ride-sharing firms to cut demand for cars. Airlines are dirt cheap but that is because the market frets about a price war and the chance of tighter antitrust regulation, not about disruption.

Many industries that you might imagine to be directly in the crosshairs of Silicon Valley are expected to plod along happily. Consider television, where Amazon, Netflix, YouTube and Apple are pouring money into buying and making new shows. There are certainly worries about consumers cutting the cable-TV cord, but the incumbent cable firms and content producers are in aggregate valued on 20 times profits, implying cash flows will continue to rise. Likewise, hotel companies, rather than being wiped out by Airbnb and throttled by online travel agents, enjoy similar perky valuations to those they had ten years ago.

The list goes on. The credit-card giants, Visa and MasterCard, are on a roll, and are together worth almost as much as Amazon: there is little sign of disruption by digital-payments firms. From stodgy banks (facing a putative threat from fintech) to electric utilities (which might be disrupted by batteries and smart grids) it is a similar story: valuations imply that investors are relaxed. Even food retail's giant sitting duck, Walmart, is forecast to see pre-tax profits increase by a cumulative 6% over the next three years.

A different kind of digital accommodation

Investors appear to be assuming an accommodation between big tech and the rest of big business, not a bloody showdown. The five largest tech firms (Apple, Amazon, Alphabet, Facebook and Microsoft) have valuations that suggest their combined share of total corporate profits will rise from 7% now to 13% in a decade. They are expected to keep near-monopolies for decades in products that attract huge public interest, such as search and social media. But they are not expected to lay waste to America Inc.

That is reasonable. Many incumbent industries have high barriers to entry. Two of the largest, banking and health care, are surrounded by a mesh of regulation. And existing big firms have raised their game. Most giants, from Walmart to General Electric, have digital or e-commerce divisions. America's incumbents spend five times more on research and development than the five big technology companies do.

But it is possible that the present balancing act may topple over. Either tech breakthroughs or deregulation could make it easier for tech firms to compete against conventional ones. If the tech boom becomes a bubble, there will be pressure on tech bosses to lower the hurdle rates they use for new projects and invest much more heavily in old industries. If they are rational, they will resist the temptation, but when you are holed up in a hotel room surrounded by admirers it can be easy to lose perspective. ■

5 GEOPOLITICAL RISKS THAT MIGHT AFFECT YOUR BUSINESS

Who would be the biggest loser in a trade war between the US and China? What if there is a large-scale cyber-attack on banking and telecoms companies? Would a pandemic outbreak be an unhappy side-effect of globalisation? Will China and India push ahead with clean energy amid America's retreat from the Paris agreement? What would be the possible economic impact on the EU in the unlikely event of an "Italexit"?

With the rise of populism and protectionism, geopolitics is more relevant than ever. The Economist Intelligence Unit (EIU) has developed 5 scenarios in an interactive infographic and a series of articles to explore that.

The screenshot shows a digital interface for the 'Growth Crossings' tool. At the top left is a button labeled 'HOW DO I USE THIS TOOL?'. In the center is a heading 'CHOOSE AN INDUSTRY'. Below it are five industry icons: TELECOMS (a computer monitor), FINANCE (a scale), CONSUMER (a person icon inside a yellow circle), ENERGY (a factory), and HEALTHCARE (a hospital bed). The 'CONSUMER' icon is highlighted. Below the industry section is a large bold heading 'CONSUMER'. Underneath it is a sub-headline 'A PROTECTIONIST US TRADE POLICY HARMS CONSUMER MARKETS'.

Explore scenarios on growthcrossings.economist.com

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**MiFID 2**

On the starting grid

A new law will reshape Europe's capital markets. They are not ready for the change

FINANCIERS usually regard new regulations as dull, annoying drudgery best left to lawyers or the compliance department. That is not an option with the second iteration of the Markets in Financial Instruments Directive (MiFID 2), a European Union law years in the making and entering into force on January 3rd 2018. The law introduces radical changes to trading in trillions of euros-worth of stocks, bonds and derivatives. But its sheer scope and complexity mean that an unprecedented number of issues and technicalities are still unresolved.

MiFID 1, in force since 2007, was aimed at shares, and spawned a proliferation of new trading venues ranging from electronic platforms to "dark pools" run by investment banks, breaking the oligopoly of dozy national stock exchanges. The new, more ambitious, law seeks to bring transparency to a far wider range of asset classes, notably bonds and derivatives.

The single reform that has probably received most attention is the requirement to "unbundle" research. The cost of the copious research notes produced by investment banks has usually been folded into brokerage fees and commissions. The new law requires brokers to charge for them separately. Asset managers must either pass the cost on to their clients or absorb it—which is what most, including giants such as BlackRock and Vanguard, have so

far opted to do. This is a substantial change; most expect large banks to slim down their research departments, for example. But as Leo Arduini of Citigroup points out, the full effects will not become clear until several years from now.

Apparent much sooner will be changes to the structure of markets themselves. On share trading, MiFID 2 bars investment banks from directly lining up buyers and sellers in their dark pools, and caps the amount of "dark" trading. To execute share trades on its own account, a bank must register as a "systematic internaliser" (SI). High-frequency trading firms, which trade with their own capital, are set to benefit from the expanded SI status. This will enable them for the first time openly to ply for business from asset managers.

Even in the familiar business of share trading, implementation has thrown up problems. Financial institutions wrangled with the regulator, the European Securities and Markets Authority (ESMA), over the precise scope of an SI, which was finalised only in August. Unless ESMA declares foreign trading venues (including such global pillars as the New York Stock Exchange) "equivalent" to EU ones, European firms may be forced to trade American shares through less liquid European listings. EU regulators say they are negotiating with their American counterparts, but it is not certain a deal can be reached by January.

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The effects of MiFID 2 on markets for derivatives and bonds will be greater still. They are still largely traded "over the counter" (ie, not on a centralised exchange) and hardly regulated at all. The law aims to make trading more open and accessible. Hence it will push more of it to electronic platforms and away from banks. For some of the most liquid derivative instruments, such as interest-rate swaps, trading on public venues will become compulsory.

The new law's main tool, however, is price transparency. For those instruments ESMA deems liquid, prices must be published both in advance and immediately after completed transactions (known as "pre- and post-trade transparency"). Even for less liquid instruments, prices must be published with a delay. Separately, regulators will require full reporting of every trade to prevent market abuse. Asset managers will be required to have "best execution" policies to show that they are trading assets at the best possible prices.

No through route

Nathaniel Lalone of Katten Muchin Rosenman, a law firm, complains that regulators tend to think mainly of equity markets, which has unintended consequences in derivatives markets. To pick just one example, the rules exempt "smart routers" used in share trading from certain requirements, but not the sort of routers used to trade futures. So even the smallest Chicago-based proprietary-trading firm that deals in futures may be cut off from European futures markets if it fails to submit to full regulation in the EU. Also worrying are the incompatibilities between American and EU rules on investor protection, and the uncertainty about the extent to which commodity firms that use derivatives (like, say, a cocoa-butter producer) may need to be ►►

► regulated as financial firms.

Another bugbear is the law's requirement for personal information. The head of bond-trading at an American bank, who says MiFID 2 takes up 90% of his time, spends much of it urging non-European clients to obtain "legal-entity identifiers", unique numbers that are needed for transaction reporting. The obligation for non-European firms to provide details of a trader, stretching even to date of birth and national-identity number, makes many queasy. In a letter to ESMA on September 11th, four large electronic bond-trading platforms and an industry body warned

that without stronger guarantees of privacy, "a material proportion of trading volumes...would leave Europe altogether."

Brexit throws up further complications. The threshold for deeming instruments "liquid" is based on trading volumes that include Britain. So Mr Lalone reckons that a "hard" Brexit might mean that most bonds and derivatives avoid the transparency requirements at the heart of the new law. Mr Arduini, for his part, doubts that "equivalence" discussions for trading venues in America or Asia can be entirely divorced from those for British ones.

This all amounts to far more than the

wrinkles to be expected with any new law. The sheer complexity of MiFID 2 casts doubt on whether its main goal—to shed transparency on formerly opaque markets—can be fully realised. Liz Callaghan of the International Capital Market Association, an industry body, likens the new law to a car, where regulators and market participants have focused heavily on certain components: "But if the car doesn't run, there's no point in designing the best wheels or the most streamlined body." No one knows yet what happens when the ignition key is turned on January 3rd. But most expect a bumpy ride. ■

Buttonwood | When the cycle turns

The next financial crisis may be triggered by central banks

AS WITH London buses, don't worry if you miss a financial crisis; another will be along shortly. The latest study on long-term asset returns from Deutsche Bank shows that crises in developed markets have become much more common in recent decades. That does not bode well.

Deutsche defines a crisis as a period when a country suffers one of the following: a 15% annual decline in equities; a 10% fall in its currency or its government bonds; a default on its national debt; or a period of double-digit inflation. During the 19th century, only occasionally did more than half of countries for which there are data suffer such a shock in a single year. But since the 1980s, in numerous years more than half of them have been in a financial crisis of some kind.

The main reason for this, argues Deutsche, is the monetary system. Under the gold standard and its successor, the Bretton Woods system of fixed exchange rates, the amount of credit creation was limited. A country that expanded its money supply too quickly would suffer a trade deficit and pressure on its currency's exchange rate; the government would react by slamming on the monetary brakes. The result was that it was harder for financial bubbles to inflate.

But since the early 1970s more countries have moved to a floating exchange-rate system. This gives governments the flexibility to deal with an economic crisis, and means they do not have to subordinate other policy goals to maintaining a currency peg. It has also created a trend towards greater trade imbalances, which no longer constrain policymakers—the currency is often allowed to take the strain.

Similarly, government debt has risen steadily as a proportion of GDP since the mid-1970s. There has been little pressure from the markets to balance the budget;

Take a peak

Developed-market bonds and equities
Average valuations relative to history
100=most expensive



Source: Deutsche Bank

Japan has had a deficit every year since 1966, and France since 1993. Italy has managed just one year of surplus since 1950. In the developed world, consumers and companies have also taken on more debt.

The result has been a cycle of credit expansion and collapse. Debt is used to finance the purchase of assets, and the greater availability of credit pushes asset prices higher. From time to time, however, lenders lose faith in borrowers' ability to repay and stop lending; a fire sale of assets can follow, further weakening the belief in the creditworthiness of borrowers.

Central banks then step in to cut interest rates or (since 2008) to buy assets directly. This brings the crisis to a temporary halt but each cycle seems to result in higher debt levels and asset prices. The chart shows that the combined valuation of bonds and equities in the developed world is higher than ever before.

All this suggests that the financial system could be due another crisis. Deutsche makes several suggestions as to what might cause one, from a debt-related crash in China, through the rise of populist political parties to the problem of illiquidity in

bond markets.

The most likely trigger for a sell-off is the withdrawal of support by central banks; after all, the monetary authorities are generally credited with having saved the global economy and markets in 2009. In America the Federal Reserve is pushing up interest rates and reducing the size of its balance-sheet; the European Central Bank seems likely to cut the scale of its asset purchases next year; the Bank of England might even increase rates for the first time in more than a decade.

Central banks are well aware of the dangers, of course; that is why interest rates are still so low, even though developed economies have been growing for several years. But the process of withdrawing stimulus is tricky. A big sell-off in the government-bond markets in 1994 started when the Fed tightened policy after a period when rates were kept low during the savings-and-loan crisis.

The high level of asset prices means that any kind of return to "normal" valuation levels would constitute a crisis, on Deutsche's definition. That might mean that central banks are forced to change course and loosen policy again. But the process would take a little time; central banks will not want to appear too enslaved to the markets.

Many investors will want to ride out the volatility; that has been a winning strategy in the past. The problems will emerge among those investors who have borrowed money to buy assets—in America the volume of such debt exceeds the level reached in 2008. The big question is which is the most vulnerable asset class. American mortgage-backed securities were the killers in 2008; it is bound to be something different this time round.

American trade disputes

A candlemakers' petition

Three trade cases facing the Trump administration spell trouble

IN 1845 Frédéric Bastiat, a French economist, wrote an open letter to his national parliament, pleading for help on behalf of makers of candles and other forms of lighting. The French market was being flooded with cheap light, he complained. Action was necessary: a law closing all windows, shutters and curtains. Only that would offer protection against the source of this "ruinous competition", the sun.

Three similar pleas are facing the administration of President Donald Trump. But these are not parodies. On September 22nd the United States International Trade Commission paved the way for import restrictions on solar panels, ruling that imports had injured American cell manufacturers. On September 26th the Department of Commerce pencilled in tariffs of 220% on airliners made by Bombardier, a Canadian manufacturer. A third decision on washing machines is due by October 5th.

This cluster of cases represents around \$15bn of annual imports, less than 0.6% of the total. But they are chunky relative to other requests, and unusually timed. "Usually these trade cases come in waves, driven by a recession or a strong dollar", says Douglas Irwin, an economic historian at Dartmouth College. Not this time.

Every protectionist is unhappy in his own way. Boeing, an American aeroplane-maker, claims that Bombardier used government subsidies to sell its new C-series airliners below cost. Fred Cromer of Bombardier Aerospace accuses Boeing of a "commercial attack" to reduce competition. Boeing has not made planes of the same size as the C-Series since 2006, and all planemakers sell aircraft at a loss in the early years of new models. Senior advisers to Boeing concede that they were too late to spot the competitive threat from subsidies to Airbus, a European rival. They want to hit Bombardier before it grows up.

The case of solar panels was brought by Suniva and SolarWorld Americas. They blame financial troubles on imported solar cells, which surged by 500% between 2012 and 2016. Cheap Chinese supply has not been contained by narrower anti-dumping duties, they claim, as producers have set up operations in third countries.

Whirlpool, an American domestic-appliance company, is seeking broad protection for its washing machines, also complaining that its competitors have bypassed tariffs. Rising imports from Thailand and Vietnam more than offset the

drop in imports from China between 2015 and 2016. Its opponents in the case accuse it of fiddling the definition of washing machine to show a surge, and have suggested the company has lost market share because of its fading brand recognition.

Even if the cases fizzle, some damage would already have been done. The uncertainty the trade actions introduce often has a chilling effect on trade and investment. But Mr Trump seems to be itching to impose tariffs, and some import restrictions seem almost certain. This would sour international relations. The British government has threatened retaliation over the threat to the jobs of Bombardier workers in Northern Ireland. The actions will most probably be challenged at the World Trade Organisation. They also risk complicating the continuing renegotiation of the North American Free-Trade Agreement (NAFTA), a deal between America, Mexico and Canada. The original deal contains protections for Mexican and Canadian exporters against this sort of trade action.

Mr Bastiat's satirical plea to the French parliament explicitly pitted producers against consumers. Similarly, pricier solar panels, washing machines or plane tickets will lighten consumers' wallets. American businesses that use solar panels would be hurt by import restrictions, too. Tom Werner, chief executive of SunPower, an American solar-energy company, and an oppo-

nent of the action taken by Suniva and SolarWorld, reports that this is the hot topic among his employees. He points out that the two petitioning companies employ a tiny fraction of America's solar-energy workforce. The industry association is warning that 88,000 jobs would be at risk if tariffs were imposed.

For trade watchers, one of the most worrying elements of these cases is the way that the solar-panel and washing-machine companies have gone about seeking remedies. Both have resorted to Section 201 of the Trade Act of 1974. That allows firms broad trade protection but has not been invoked since 2001. It fell out of use because of the high legal threshold for proving injury, and the tendency of previous American governments to reject tariffs in the broader national interest. Companies may be responding to signals from the present administration that it will be sympathetic to claims. "The worry is that this is a crack open of the door and it's about to swing open," says Mr Irwin—a rare case where closed might be better than open. ■

Electronic payments

Playing the Viking card

Buyers snap up Nordic payments firms

THE Vikings were slow to adopt coins. They preferred to pay by cutting pieces off silver bars, at least until contact with the rest of Europe convinced them of the benefits of standardised coins. Today their Nordic descendants are abandoning coins and notes in favour of electronic payments. Two Nordic e-payments firms have recently announced that they will be acquired by foreign companies. The rest of the world, too, is using less cash. And they want the financial backing to enter new markets.

On September 25th Nets, a payments firm based in Denmark, announced that Hellman & Friedman, an American private-equity firm, had offered to acquire it for DKK33.1bn (\$5.3bn). Nets is following Bambora, a Swedish-based payments firm, for which Ingenico, a French electronic-payments firm, offered €1.5bn (\$1.7bn) in July.

Nets was created in 2010 from the merger of payments companies in Denmark and Norway. It has a strong presence in both countries. Dankort, Denmark's national debit-card system, belongs to Nets, which also provides processing for Bank-Axpet, the equivalent service in Norway. After buying a Finnish payments firm in 2012, Nets was itself bought in 2014 by Bain Capital and Advent International, two American private-equity firms, and ATP, a ➤



Ruinously competitive

► Danish pension fund. It then acquired several more payments firms across the Nordic countries, gaining footholds in Finland and Sweden.

Bambora was created by Nordic Capital, a Jersey-domiciled private-equity firm. Bambora is based around Euroline, a Swedish merchant-acquiring service that handles credit- and debit-card payments for shops. Nordic Capital acquired Euroline in 2014, then bought 12 firms that provide other services or operate in other markets. Combined into Bambora, these companies provide electronic- and mobile-payments services for consumers and shops in Europe, Asia and North America.

The new owners of Nets and Bambora will want to expand even further. Other countries may take more time to reach Nordic levels of cash-avoidance. The creation of pan-Nordic payments companies was encouraged by common habits and by national-government policies. Nordic citizens are used to paying by plastic, and now by mobile phone as well. Their governments have also been pioneers in online government services. To facilitate access to these services, they have set up secure online identification programmes. Payments systems have been able to piggyback on this online infrastructure.

Nets and Bambora will face competition from other payments systems in an industry that, globally, is fast consolidating. As more and more retail business moves online, payments firms have become attractive acquisition targets. And in an industry where margins are slender, sheer size matters. In July, Vantiv, an American merchant acquirer, announced its purchase of Worldpay, a British merchant acquirer. Payment firms are going global. The Viking spirit, backed by foreign cash, is expanding into a very competitive market. ■



Bitcoin in China

Cryptocrackdown

Once a leader in virtual currencies, China turns against them

BITCOIN and China always made odd bedfellows. Devotees of bitcoin love its independence from central authorities; in China the central authorities love their power. That they would accept a cryptocurrency that weakened their control over something as fundamental as the management of money seemed unlikely. Yet China had become the world's biggest bitcoin market, dominating both its trading and computer-powered "mining".

It was not meant to be. Bitcoin's surprising success in China appears to be nearing its end. A series of bans announced over the past month have made clear that bitcoin and all fellow travellers, from ethereum to litecoin, have little place within its borders. Some hope that the bans are temporary. The government has, after all, declared an ambition to make China a leader in the blockchain technology that is integral to bitcoin. But it seems more likely that officials will tighten their grip on China's remaining crypto-coin bastions.

Bitcoin had been in trouble in China since February, when the central bank, aiming to stem illicit capital flows, ordered exchanges to halt virtual-currency withdrawals until they could identify their customers. China's share of global bitcoin-trading went from more than 90% to just about 10% (see chart).

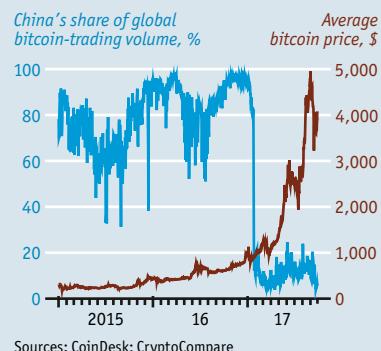
As bitcoin-trading slumped, attention shifted to other cryptocurrencies and their cousins, crypto-tokens. These are issued in Initial Coin Offerings (ICOs), which allow startups to raise cash. But on September 4th regulators banned ICOs, calling them a form of illegal fundraising. And that presaged an even harsher step, an order that all virtual-currency exchanges shut by the end of the month.

Why the government acted at this moment is unclear, but it dovetails with a campaign to rein in financial risk that has been running for a year. With bitcoin looking like an ever-frothier bubble and a five-yearly Communist Party congress in October, stability is the paramount goal.

China's crackdown initially sent shock waves through global crypto-markets. The bitcoin price tumbled by 35% from its highs before the ICO ban to its low point, on news of the exchange closures. But it has since rebounded by more than 20%. Many bitcoin fans are keeping the faith.

Nevertheless, for investors in China, the closure of the exchanges could be a lethal blow. The government has not made it

Not coining it



illegal for individuals to own bitcoin. But they can do little with it. In theory they can still trade in private, but liquidity will be much lower than on exchanges. If they shift to exchanges outside the country, they would run afoul of capital controls. Moreover, there is talk that regulators might block web access to offshore trading sites.

For now, China's bitcoin miners can continue excavating their digital ore. They create some 70% of new bitcoins by operating the computers that do the number-crunching that underpins the cryptocurrency. Chinese firms benefit from cheap equipment and cheap electricity, setting up in remote parts of the country where plenty of power plants have excess capacity. But miners fear their days are numbered. The government could declare them illegal. Or it could try to undermine them by slowing their connections with trading platforms outside China.

The global impact of China's demise as a bitcoin hub is not straightforward. Cutting such a big economy out of the action might seem obviously negative. But as the rebound in bitcoin prices has shown, investors are, for the moment, not overly concerned. The possibility of a crackdown in China had loomed over the market for years. What's more, if Chinese miners are forced to the sidelines, there will be more room for others. The ban in China may also ease the currency's governance problems. It weakens the influence of Chinese miners, who have clashed with Western bitcoin developers.

A bigger threat is that other countries follow China's lead. Regulators are stirring. In America, the Securities and Exchange Commission announced this week that it would create a cyber unit, which, among other things, will tackle misconduct in digital currencies. In Japan, hitherto a haven, the Financial Services Agency will start placing exchanges under close surveillance in October. Australia, Canada and Europe are talking of tougher rules. China, in other words, might still be at the vanguard of the cryptocurrency world, but exercising the kind of leadership that bitcoin boosters least want to see. ■

The Bank of Japan

Dig deeper

TOKYO

The inflation target is again postponed, but policy is unchanged

SEVENTH time lucky? Minutes of the Bank of Japan's (BoJ) policy meeting in July, published on September 26th, showed that the central bank had, for the sixth time since 2013, pushed back the date at which it expected prices to meet its 2% inflation target—to the fiscal year ending in March 2020.

Four-and-a-half years since Haruhiko Kuroda took office as governor and embarked on an unprecedented experiment in quantitative easing (QE), the bank is still far from its goal. It has swept up 40% of Japanese government bonds and a whopping 71% of exchange-traded funds. The bank's balance-sheet has tripled. It is now roughly the size of the American Federal Reserve's.

Yet, despite his apparent failure, and despite a snap general election, Mr Kuroda may yet stay for another five years when his term runs out next April. If not, most of his likely successors are signed up to the same reflationalary policy. At least one member of the bank's board gave warning at its most recent policy meeting on September 20th-21st that the measures it has taken are insufficient to stoke the desired inflation. These include keeping short-term interest rates negative, at about -0.1%, and ten-year government-bond yields at around zero. Soon, however, debate might turn to the feasibility of the 2% target.

Many countries would be happy to have Japan's problems, says Masamichi Adachi of JPMorgan Securities: full employment, soaring corporate profits and the third-longest economic expansion since the second world war. But with government reforms faltering, the BoJ's role as custodian of "Abenomics" (the policies of the prime minister, Shinzo Abe), seems assured. A labour crunch may at last be

working where government badgering of Japanese companies to pay workers more has failed. In a speech this week, Mr Kuroda pointed to rising wages as a reason to hope inflation will pick up. Firms, he said, have been absorbing the cost to keep prices low, but will not be able to do so for ever.

Not all share his optimism. Monetary easing is failing in one of its aims, says Sayuri Shirai, a former BoJ board member: to foster risk-taking corporate behaviour. Instead, the amount of cash hoarded by Japan's companies has grown by about ¥50trn (\$443bn) over the past five years and exceeds ¥210trn, a record.

With sluggish investment and demand, Mr Kuroda's monetary blitzkrieg will continue. The risk, says Ms Shirai, is that mone-

tary policy has become a crutch for the entire economy. Leaning on the central bank, some companies are reducing efforts to boost productivity and improve governance, she says. And, by becoming the largest shareholder in several companies, the bank is distorting the pricing function of the market, adds Nicholas Benes, of the Board Director Training Institute of Japan.

Mr Kuroda stunned the markets with QE in 2013 and has continued to surprise since with a string of policy innovations. But nobody, says Mr Adachi, can see when the BoJ will start to reduce its asset purchases, let alone trim its balance-sheet. Perhaps never. For all the problems its easy-money policy brings, many think it more costly to ditch it than to keep on digging. ■

Venture capital

Girl power

How having a daughter boosts investors' returns

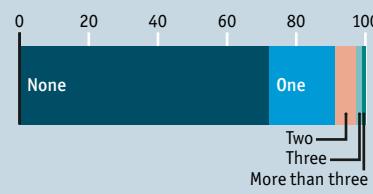
RICHARD NESBITT, a former chief operating officer at the Canadian Imperial Bank of Commerce, has long been an evangelist for women in business. In "Results at the Top", a book he wrote with Barbara Annis, he describes his efforts to convince men to promote women. When speaking to bosses, he stresses data showing that companies with more senior women are more successful. But he has noticed that men with daughters tend to be more receptive to his message. At least for venture-capital (VC) firms, recent research confirms this observation, as well as the assertion that gender diversity boosts performance.

Paul Gompers and Sophie Wang at Harvard University wanted to determine whether VC firms with more women managers do better. Answering this question is tricky—firms that hire more women may have other characteristics that lead to success. VC-investing remains a predominantly male activity. In the authors' sample of 988 VC funds in 301 firms, around 8% of new hires were women. Very few firms hired more than one woman manager (see chart). Managing partners who hire more women may be less hidebound by convention—a good trait for someone investing in innovative technologies. The authors needed a way to measure the impact of women on success independent of other factors. Ideally, a random factor would influence the number of women hired by a firm. The authors looked at the number of daughters among partners' children.

Parenthood changes perspectives. VC partners with one extra daughter rather than an extra son employed on average almost two percentage points more

Bring out your daughters

Number of female managers hired at venture-capital firms, 1990 to mid-2016, % of funds*



Source: "And the Children Shall Lead" by P. Gompers and S. Wang, May 2017

*Based on the last five years of 988 global funds

women managers. This led to a 24% higher probability that a firm would have a senior female manager. The researchers reasoned that a link between daughters and success could be attributed to a greater number of women managers.

A firm where a partner has an extra daughter rather than an extra son had a 2.9% higher chance that its deals would be a success (defined as an initial public offering or other profitable sale of a company the firm had backed). Such firms also have higher internal rates of return. Hiring women is indeed a sound business strategy.

Mr Nesbitt notes that this finding matches one of the main arguments of his book. Gender diversity in business increases diversity of thought, which leads to better decisions. He adds that, on its own, the paper is unlikely to lead to more women in executive offices. To achieve that, men need not only to accept the case for women intellectually, but to acknowledge that they personally need to act to promote them. Ideally, that should not take the birth of a daughter.

Kuroda's stockpile

Japanese government bonds



Free exchange | Wearied science

New ideas are getting harder to find—for now

WE'RE there far fewer undiscovered ideas out there than in our more primitive past, how would people know? This is not an idle question; decoding the mysteries of nature, from atmospheric pressure to electricity to DNA, allowed people to bend the natural world to their will, and to grow richer in the process. A dwindling stock of discoverable insights would mean correspondingly less scope for progress in the future—a dismal prospect. And some signs suggest that the well of our imagination has run dry. Though ever more researchers are digging for insights, according to new research, the flow of new ideas is flagging. But that uncovering new ideas is a struggle does not mean that humanity is near the limits of its understanding.

The development of new ideas—meaning scientific truths or clever inventions—allows economies to grow richer year after year. Adding more workers or machinery to an economy boosts GDP, but only for a while. Applying ever more men with hoes to the cultivation of a field will generate diminishing returns in terms of crop yields, for instance; wringing more from the soil eventually requires the use of better seed-stock or fertiliser. Unless humanity finds new ways to do more with the same amount of labour and capital, growth in incomes peters out to nothing.

Dwindling growth in incomes is not a bad description of what has happened in much of the industrialised world in recent decades. Meagre rises, in turn, lead some to conclude that there are simply not many breakthroughs left to be uncovered, of the sort that lifted living standards during the Industrial Revolution. That, for instance, is the view of Robert Gordon, an economist at Northwestern University, whose bleak book, “The Rise and Fall of American Growth”, reckons that the era of economic revolution is behind us.

Is it? A recent paper by Nicholas Bloom, Charles Jones and Michael Webb of Stanford University, and John Van Reenen of the Massachusetts Institute of Technology, provides relevant evidence. Though striking an agnostic position as to whether humanity has used up all its eureka moments, they nonetheless conclude that new ideas are getting more expensive to find. The authors consider four different case studies, within which they compare research “inputs” (such as the money spent on researchers and lab equipment) and outputs. The number of transistors that can be squeezed onto a microchip has doubled with reassuring regularity for half a century, every two years or so—a phenomenon known as Moore’s Law (after Gordon Moore, a founder of

Intel). Yet this success has been achieved by pouring more and more resources into the effort over time. The research productivity of each scientist participating in the battle to cram in transistors has correspondingly tumbled.

Much the same is true in other fields of inquiry, such as efforts to raise crop yields and extend life. As the authors acknowledge, squeezing oranges dry is not a problem if new oranges keep arriving: ie, if new lines of research appear even as others are exhausted. Yet they reckon that, across the economy as a whole, the notion that the cost of ideas is rising holds true. Since the 1930s, the effective number of researchers at work has increased by a factor of 23. But annual growth in productivity has declined (see chart).

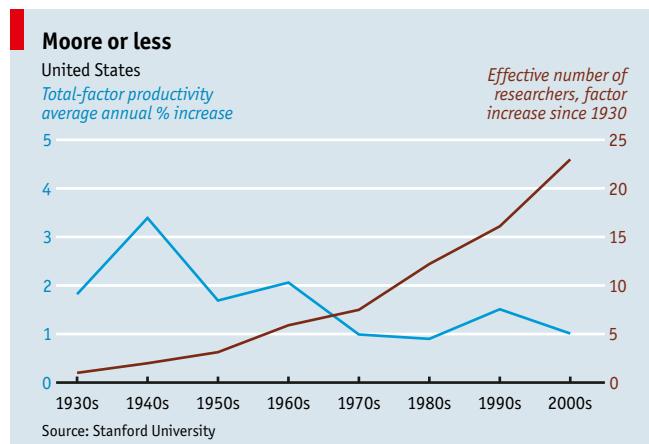
Not the only fruit

Despair is premature, however. The effort to find new, growth-boosting ideas is not necessarily hopeless, just complicated. Whether herding more researchers into the laboratory raises growth might depend on how intensively the resulting brainstorms are used, for example. Across the global economy, many countries have yet fully to exploit ideas already in use by firms at the frontier of scientific knowledge. The problem, in other words, is not that oranges are in short supply or are already squeezed dry, but rather that of the ten workers at the juice bar, only one has learned to do the squeezing. Investments in education and training, to expand the share of workers that can use new ideas, or in the quality of management, to improve how effectively ideas are applied within firms, would do wonders for growth, even if the world’s scientists are idly scratching their heads.

Analysing the supply side of the innovation equation in isolation can also be misleading. The demand for new ideas, and, correspondingly, the incentive to tackle difficult questions, also matters. In his analysis of the Industrial Revolution, Robert Allen, an economic historian then at Oxford, sought to explain why it started in Britain rather than anywhere else. Supply-side factors, such as improved literacy and stronger property rights, certainly played a part. But it was the demand for labour-saving innovation, prompted by Britain’s relatively high wages at the time, which gave tinkerers a strong incentive to develop and hone the steam engine and its applications.

Put differently, researchers are often like the drunken man searching for his keys under the streetlight, because that is where the light is. Until some pressure is applied to encourage him to look elsewhere, the search will often prove fruitless. It is easy to see why firms might take a lackadaisical approach to some research questions. Disappointing wage growth across advanced economies is a deterrent to the invention and use of labour-saving innovations. Persistently high rates of profit give big firms plenty of money to plough into fancy research labs, but also suggest that the competitive pressures which might prompt them to exploit the resulting discoveries are weak.

The accumulation of knowledge is in some ways a burden. The more is known, the more researchers must absorb before they can add to the stock of human knowledge—or the more they must collaborate with other researchers to combine their areas of expertise. But the incomplete exploitation of currently available knowledge is in some way reassuring. It suggests that people are underperforming relative to their potential: both in how they use available ideas and in how they uncover new ones. ■





Air travel

Mechanical engineers

NISKAYUNA

Tiny robots will inspect and fix jet engines from the inside

IF YOU are reading this while sitting in an aircraft and are of a nervous disposition, do not be alarmed, but the temperature inside the jet engines keeping you aloft probably exceeds the melting point of the materials that those engines are made from. That they do not consequently turn into a molten mess is a feat of modern engineering. It involves a combination of tough alloys and advanced production techniques, such as 3D printing, which allow components to be made with tiny channels through which cooling air circulates. Parts exposed to the most extreme temperatures, which can reach more than 1,300°C, are given additional protection with a coating of special heat-resistant ceramics.

New jet engines are designed to run hot because that results in a more complete combustion, which lowers fuel consumption and cuts emissions. Hot engines, though, need nurturing. Nowadays the three big aircraft-engine makers, General Electric (GE), Rolls-Royce and Pratt & Whitney, usually include servicing as part of their sales, and many jet engines are leased on a "power-by-the-hour" contract. This means regular check-ups and maintenance are in the interests of airlines and producers alike. The difficult bit is inspecting an engine without dismantling it. That requires taking the aircraft to which the engine is attached out of service. And, with a power-by-the-hour contract, when a plane disappears into the workshop, it is not just

the airline that loses money, but the engine maker, too. The hunt is therefore on for faster and more efficient ways to keep engines in tip-top condition.

Don Lipkin, a chief scientist at GE Global Research in Niskayuna, New York, and his colleagues Todd Danko and Kori Macdonald, think they have come up with one. They are developing tiny robots which can venture inside an engine to inspect its innards and carry out any necessary repairs. Eventually, these robots may be able to work while a plane is waiting at a gate between flights.

Send in the microbots

Dr Lipkin's robots are being tested in a laboratory, but he hopes to have them ready to go inside operating aircraft by the end of the year. To start with, they will conduct inspections. Later, once techniques are perfected, they will begin making repairs. Such robots will also be used to inspect and repair GE's gas turbines. These are jet engines used in power plants to generate electricity, rather than as propulsion devices. But they, too, would benefit from reduced downtime for maintenance.

Inspecting the fan blades that draw air into the front of an engine is reasonably straightforward, because those blades are large and visible. But things get harder the deeper you go. Following the fan are a series of closely packed blades that compress the air before it arrives at the combustion

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chamber. When the compressed air reaches that chamber, and is mixed with fuel and ignited, the resulting hot gases then blast out of the rear, providing thrust. Some of those gases are diverted through a series of stubby turbine blades near the back of the engine. These, via shafts, turn the fan and the compressor, and thus keep the whole arrangement running.

In a working engine, all of these components are so tightly packed together that sometimes the only way to peek inside is by inserting an endoscope (a camera on a flexible tube) through a hole in the engine's casing. But the view is limited. The researchers' robots, however, are small enough to navigate their way around all the various blades, photographing everything they see and relaying the pictures wirelessly to technicians. Then, once the pictures have been analysed, the robot itself can often effect a repair.

The team's robots come in several varieties. One is about the size of a small envelope and is flexible. It runs along a sort of rack-and-pinion track that is inserted into the back of the engine. The track is made from a long strip of plastic which, with a twisting action, can be flicked between the blades. The robot is attached to the track and employs a toothed drive-mechanism which connects to a series of holes in the plastic strip and permits the device to propel itself along. Once it has arrived at its destination, it expands so that it is gripped between a pair of blades. The track is withdrawn and the robot hitches a ride on the blades as these are rotated manually by technicians. That way it can photograph internal surfaces adjacent to the blades as it passes. Once its job is done, it can be pulled out on a cord.

Another type of robot, a few centimetres square, crawls inside an engine on caterpillar tracks. A third version uses mag-

►netic wheels. These let it grip surfaces made with specialised steels in the cold front section of ground-based gas turbines, and thus work upside down if necessary. All the robots are driven by a human operator using a tablet computer. To repair things, the machines are fitted with tiny arms that reach out and inject ceramic coatings from a cartridge of material to fill in any damaged areas. The robots can also carry small grinding tools, to smooth down ragged surfaces.

Such repairs may not be as permanent as those during a full rebuild, but they are good enough to extend the time an engine

can operate between major overhauls. Moreover, data collected by the robots would be used by GE to update the engine's "digital twin". These twins are virtual replicas, held on a computer, and contain the latest operating data sent via satellites from sensors mounted inside engines. The twins serve as test beds for spotting problems before they get serious. This means preventive maintenance can be carried out and unscheduled visits to the workshop avoided.

Robots will allow much finer monitoring of an engine's wear and tear. That varies, according to how aircraft are used—

even by particular pilots, some of whom push aircraft engines harder than others do—and where in the world a plane most often operates. Airborne particles, particularly in polluted regions, can block the tiny cooling channels that help stop an engine melting. Wind-blown sand grains in places such as the Middle East subject blades to increased abrasion. Jet engines are already remarkably reliable, with the need for an in-flight shutdown now in the order of once in 20,000 hours of operation, which means a pilot may never experience a failure in his entire career. Tiny robots will make them more so. ■

Birds' nests and parasites

Butt in or butt out?

Some birds use discarded cigarettes to fumigate their nests

NESTS are made from things birds find in the environment. For those that live far from human dwellings, twigs and leaves predominate. For those that live in cities, the list of materials is more eclectic. Often it includes plastic bags, paper, aluminium foil, electrical cables and even cigarette butts. Most of these have been assumed to be the result of birds simply making do with what the urban world provides them, but a study just published in *Avian Biology* by Monserrat Suárez-Rodríguez and Constantino Macías García of the National Autonomous University of Mexico has demonstrated that the cigarette butts are being woven into nests not by accident but by design.

That idea has been around, though never proved, since 2012. This was when Dr Suárez-Rodríguez showed that nests which had butts woven into them were less likely to contain bloodsucking parasites than were nests that did not. What she was unable to show was whether the nest-builders were collecting discarded cigarettes deliberately for their parasite-repelling properties, or whether that parasite protection was an accidental consequence of butts being a reasonably abundant building material.

To discover the truth, Dr Suárez-Rodríguez and Dr Macías García set up an experiment involving house finches that were nesting on their campus. They studied 32 nesting pairs of these birds, waiting for their eggs to hatch. As soon as that happened—a time when, the researchers knew, meddling with the nests would be unlikely to cause the finches to abandon them—they collected the linings of the nests and replaced them with cups of felt that were wreathed with bits of plant material commonly used by the birds. Taking the old linings removed both any parasitic ticks present (since

these live in the linings) and any butt material, which also tends to get woven into the material. Once the new linings were in place, the researchers added parasites to some of them. Ten of the nests each had 70 live ticks added, ten had 70 dead ticks added and 12 had no ticks added. They then waited for the chicks to fledge and, once that had happened, collected the linings of the nests for further analysis.

Specifically, they looked at the number of butts which the finches had brought to the nests after the new linings had been fitted. Nests that had had dead ticks or no ticks added along with the new linings contained no butts. In contrast, those nests that had had live ticks added to them contained, on average, one-and-a-quarter butts each. Based upon these findings, Dr Suárez-Rodríguez and Dr Macías García argue that their finches are indeed collecting cigarette butts deliberately, to keep ticks at bay and improve the survival of their young.



Smoking kills—bugs

Child psychology

Paradise, postponed

Today's children are better than yesterday's at resisting temptation

“**O**UR sires' age was worse than our grandfathers'. We, their sons, are more worthless than they; so in our turn we shall give the world a progeny yet more corrupt.” That was the way of the world according to Horace, a Roman poet, writing in about 20BC.

He has no shortage of contemporary successors. Doomsayers of the past two centuries have blamed, among other things, novels, the radio, jazz, rock 'n roll, television, horror films, Dungeons & Dragons, video games, the internet, smartphones and social media for the sad decline of the young. John Protzko, a psychologist at the University of California, Santa Barbara, though, wondered whether things might not be quite so gloomy as they seemed. To try to bring some rigour to the question, he went hunting for examples of a cognitive experiment called the marshmallow test. This test, first performed at Stanford University in the 1960s, measures how good young children are at self-control—specifically, whether or not they can defer a small but immediate reward, such as a marshmallow, in favour of a bigger one later. It was one of the first examples of a standardised psychological test, so it gave him plenty of historical data to work with.

The set-up is simple. A child is taken into a room and presented with a choice of sugary snacks. A researcher explains that the child can choose his favourite treat and eat it whenever he likes—but, if he waits 15 minutes, he can have two instead. The researcher then leaves the room. Age is the strongest predictor of successfully resisting the temptation to scoff the treat straightaway. Among children of the same age, however, doing well on the test is associat-

ed with plenty of good things later in life, from healthy weight to longer school attendance and better exam results.

Dr Protzko examined data from 30 studies spanning the past 50 years (though the original Stanford study was not one of them). At the same time, he polled 260 experts in child cognitive development, inviting them to predict what he might find. Just over half thought that children would have become worse at delaying gratification—perhaps thinking about a plethora of recent studies into the supposedly deleterious effects of modern technology. Another third predicted no change.

Only 16% of the experts made the correct prediction. This is, that children have become steadily and significantly better at the test over the past half century. In 1967, the average waiting time before succumbing to temptation was around three minutes. By 2017, that had risen to eight minutes—an increase of about a minute a decade. And that increase seems to be happening at all levels of ability. The most impulsive children are improving at the same

rate as the most prudent.

The rate of increase caught Dr Protzko's eye as well. That rate, a fifth of a standard deviation every decade, is about the same improvement as has been seen in IQ tests over the past 80 years. (Standard deviation is a measure of variation about a mean value. About two-thirds of a normal distribution lies within one standard deviation of the mean.) The cause of this increase in IQ, which is dubbed the Flynn effect after the psychologist who brought it to the world's attention, remains mysterious—as does whether Dr Protzko's results are related to it. IQ is associated with the ability to delay gratification, but the correlation is far from perfect.

What is clear, though, is that Horace and his successors are not only wrong (they must be, or civilisation would have collapsed into the mud long ago), but that, over recent years, youth has actually been improving, at least in some respects. "Talking down the young," Dr Protzko observes, "seems to be a sort of human cognitive tic." He is now interested in working out why. ■

ware for disabled gamers. The group's kit ranges from one-handed controllers designed for amputees, to "access pods", which are adaptors that serve as central hubs for a variety of other devices designed to do what traditional directional pads and buttons do on game controllers, but in a way that is more accessible for people with disabilities.

Kicking with your head

For instance, attaching a tilt switch to a player's head can allow people without dexterous control of their hands to produce movement within a game by moving their head instead. A switch which players can kick with their legs can help those with cerebral palsy, who sometimes struggle with the sort of short, sharp button presses that many games demand, with the result that footballs fly over goals or characters jump much farther than intended. A kick switch can help by creating a pulse of finite length, even when held down for an extended time.

Mr Harbach's designs are intended mostly to accommodate those whose ability to move is restricted in one way or another. But other developers are trying to help those whose senses are impaired.

The most common type of colour blindness, for example, is deuteranopia. This affects about 5% of men, and makes it hard for them to distinguish between red and green. Those two colours are often used in video games to define opposing teams or to indicate correct and incorrect choices. Rockstar Games, the New York-based authors of the "Grand Theft Auto" series of video games, get around that problem by using different shapes as well as different colours in the game's built-in map. EA Dice, a Swedish subsidiary of Electronic Arts, an American game developer and publisher, goes further. Its "Star Wars Battlefront" offers four pre-selected colour schemes. One of these is for players with normal vision; the other three cater to those with protanopia, deuteranopia and tritanopia (which correspond to people's difficulties sensing red, green and blue light respectively).

For those who are actually blind, "Madden NFL 18", another Electronic Arts product, will shortly offer systems that use touch and sound cues which, the firm believes, should allow even people who have lost their sight completely to play. By making a controller vibrate in different ways, the firm hopes blind players will be able to choose different strategies for their virtual charges to execute. Similarly, Microsoft announced in January a new set of developer tools for Xbox and PC games. One feature allows a user to make two controllers act as one, which the firm hopes will make games more appealing to those who need help from others to play. Text-to-speech software, which reads out options ►



Video gaming

Sure plays a mean pin ball

Games are being designed for people with disabilities

IN 2009 AbleGamers, an American charity hoping to improve the lot of disabled video-game players, sent some representatives to a game-development conference in San Francisco. They asked the assembled producers if they had ever thought about making their products disability-friendly. Most said no. A few said yes. One person walked away laughing.

That was a mistake. In America alone, some 33m players of video games are reck-

oned (on a broad definition) to have one sort of disability or another. However many there are, making it hard for them to play a game means leaving money on the table. Eight years on, such dismissive attitudes are much less common. Some developers go out of their way to take disabled people's interests into account.

One such is Geoffrey Harbach, the boss of Long Eaton Powered Mobility Integration Service, a British firm that makes hard-

► in menus as they are highlighted, is another boon. Before the advent of such reading software, says Ian Hamilton, a consultant who specialises in disabled gaming, blind gamers had to rely "on painful trial and error" to learn menu systems by heart.

Nor do disabled gamers have to wait for big companies to give them a hand. Some aids are made by co-opting other products. Many games use audio cues to announce things such as a timing device running out

or the player being injured. SUBPAC is a company based in California that makes chair attachments and backpacks designed to convert low-frequency sounds into vibrations that can be felt throughout the body. The idea began life as a crowd-funded project aimed at music fans, but the company now counts deaf gamers among its customers, too. By attaching the firm's products to their chair, deaf players can feel those cues instead of hearing them. ■

Meteorology

A thousand eyes on the sky

A clever way to detect and forecast rain using mobile-phone networks

NO ONE knows exactly how many people died in a series of mudslides that happened in and near Freetown, the capital of Sierra Leone, on August 14th. The upper estimates are more than a thousand. The areas swept away had not been evacuated partly because no one knew how much rain had actually fallen beforehand, laments Modeste Kacou, a rainfall expert at Félix Houphouët-Boigny University in Abidjan, in nearby Ivory Coast. Rain gauges are sparse in Sierra Leone. Satellites detect rainfall in the tropics, but estimates for small areas are often inaccurate. Worse, these numbers are calculated hours after the fact. Many countries therefore use cloud-scanning ground radar to measure precipitation as it is happening, but Sierra Leone has no such radar.

Nor do many other poor countries. Ivory Coast has double the GDP per person of Sierra Leone, but like most of west Africa, it also lacks precipitation radar. Indeed, maintenance costs mean that the number of weather stations around the entire world is shrinking, making it harder to forecast flash floods and landslides even in some rich countries. It would be useful, therefore, if some other way of measuring rainfall—preferably a cheap one that employs existing, widespread equipment—could be devised. Fortunately, there is just such a method, and it involves mobile-phone networks.

The basic insight is straightforward enough: rain weakens electromagnetic signals. Many mobile-phone towers, especially in remote areas, use microwaves to communicate with other towers on the network. A dip in the strength of those microwaves could therefore reveal the presence of rain. The technique is not as accurate as rooftop rain gauges. But, as Dr Kacou points out, transmission towers are far more numerous, they report their data automatically and they cost meteorolo-



It's going to get wet

gists nothing. He runs the Ivory Coast operations of Rain Cell Africa, an effort paid for by the World Bank, the UN Foundation, a charity, and the Institute for Development Research, which is based in France, to map rainfall in parts of Africa using data donated by Orange, a big telecoms firm, and Telecel Faso of Burkina Faso, a small one. Had the system been running in Sierra Leone, he reckons evacuations could have been carried out in time.

Rich countries are interested, too. A pilot project in the Netherlands a few years ago produced promising results, but it has not yet been followed up. This month officials in Gothenburg, Sweden, began to study rainfall maps derived from data col-

lected every ten seconds from 418 mobile-phone towers owned by a firm called Hi3G. The hope is this will provide more accurate estimates of rainwater about to slosh into the municipal waterworks, helping managers to limit flooding and sewage overflows. Until now, the city has relied on 13 rain gauges, backed up by radar sweeps of the sky that are neither sufficiently frequent nor sufficiently precise, says Jafet Andersson, a hydrologist behind the scheme at the Swedish Meteorological and Hydrological Institute. Satellite data on rain in northern latitudes are so poor the agency does not bother using them at all.

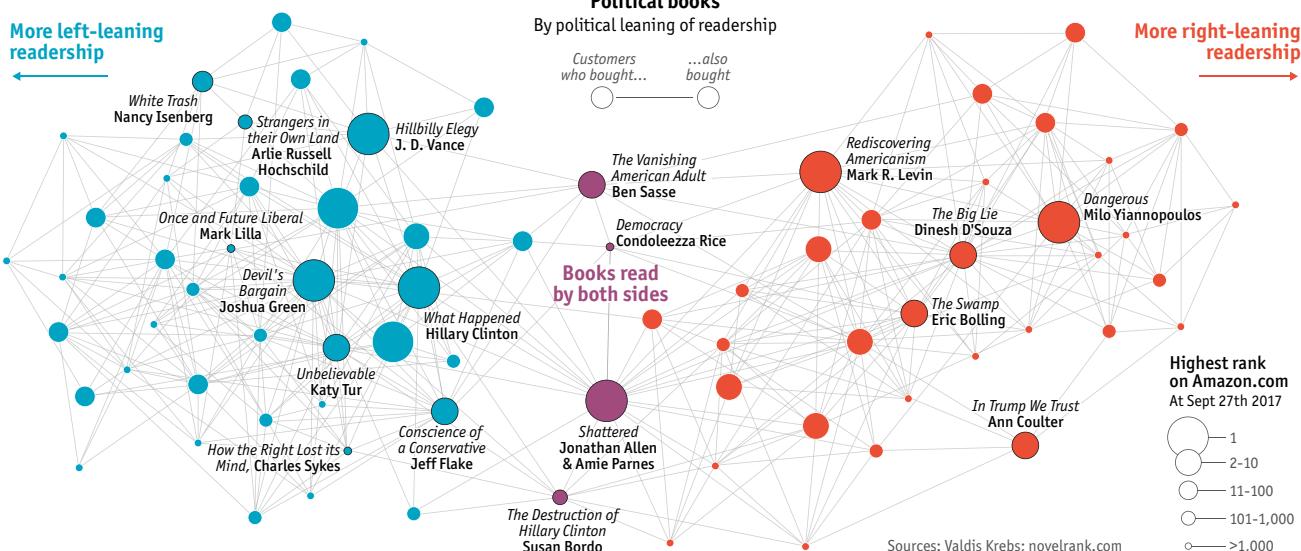
Though it is useful to know how much rain is falling right now, forecasting is even better. Telecom data promise to make this easier as well. Some newer networks are sufficiently sensitive that they can detect humidity and fog, both of which are predictors of imminent rain. Newer generations of mobile-phone masts use shorter wavelengths in their transmissions, because these can carry more data. Serendipitously, that also permits tinier amounts of water to be detected, for moisture weakens short wavelengths more than long ones. Using data from about 5,000 towers operated by three telecom firms in Israel, Pinhas Alpert of Tel Aviv University creates moisture maps that, he says, are far more precise than those drawn with data from the Israel Meteorological Service's humidity gauges, of which there are fewer than 70.

The right wavelength

Moreover, because transmission towers are so common, predicting where rainclouds are being pushed by winds is easy and accurate, notes Dr Andersson. Several governments in Africa and South-East Asia have asked his team to set up rainfall-measurement networks for them. No deals have yet been signed, though, for there is a stumbling block: money.

For the time being, telecoms companies are happy to let forecasters use their data free of charge. As the value of such data becomes clearer, says Frédéric Cazenave of the Institute for Development Research, that is likely to change. Consider ClimaCell, a firm based in Boston, Massachusetts. In April ClimaCell began selling forecasts based on phone-tower data which are so precise, it claims, that its customers will be able to tell "if a plane, crane or game" will get soaked.

The firm's clients include three airlines, several sports leagues, a construction company, a drone operator and a hedge fund (which uses weather forecasts to make trades). It plans to offer its forecasts in India by the end of this year, and to expand into ten more countries in 2018. If ClimaCell pulls that off profitably, telecom firms in both the rich and poor world are likely to start demanding a slice of the action. ■

**Political books**

Purple blues

Some authors try hard to span America's political divide. Rarely do they succeed

THAT left- and right-leaning Americans read different books might be the least surprising fact about publishing. After all, they live in different places, eat different food, listen to different music and, of course, consume different kinds of news. All these reinforce one another; increasingly, progressives and conservatives simply do not know each other. And an analysis of book sales on Amazon, done for *The Economist* by Valdis Krebs, a data scientist specialising in network analysis and visualisation, bears that out graphically (see chart). People who buy conservative books buy only conservative books, as a rule, and the same is true on the left. Our data is taken from Amazon's "Customers who bought...also bought..." feature.

Two liberal tomes are dominating the *New York Times* non-fiction bestseller list. In "What Happened" Hillary Clinton admits to some mistakes in her run against Donald Trump, but she spends rather more time on Russian hackers, a herd-like press corps and James Comey, the FBI director whose investigation of her e-mail practices, she thinks, cost her the election. Number two on the Times list is "Unbelievable" by Katy Tur, released on September 12th, about her time covering Mr Trump for NBC, a broadcaster. Ms Tur serves up story after story about Mr Trump's outrageous behaviour towards her, from badgering her about her reporting to kissing her cheek and then bragging about it on camera. He once encouraged a crowd so braz-

ely to jeer at "little Katy" in the press box that Mr Trump's own Secret Service detail walked her out for her safety.

But the past year has also seen several thoughtful attempts to break free of the formula of writing for the partisan faithful. One way to do this is to write a sympathetic, or at least fairly researched, look at the other side. Writers from the left in particular have tried this. Arlie Russell Hochschild, a professor emerita in sociology at the University of California, Berkeley, spent months in Louisiana trying to understand how right-wing voters—scraping by economically, their environment devastated by oil and gas companies—nonetheless vote for politicians who promise to slash government services and the Environmental Protection Agency. Ms Hochschild's result, "Strangers in their Own Land", published last year, is distinguished—but read mostly by people who read other left-leaning books, not by people like her subjects. The same goes for "White Trash" (June 2016)—a history of the centuries-old forces that shaped an angry white underclass, by another academic, Nancy Isenberg. In today's tribal environment it is strikingly sympathetic to the block of voters who formed Mr Trump's electoral base.

Conservative authors, by contrast, seem little interested in analyses of the minds of voters in Brooklyn or Berkeley. It was not always thus. The 1990s and first decade of the 2000s were more fruitful in this regard. David Brooks, a conservative col-

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umnist, once perceptively spotted the new confluence of bohemian lifestyles and bourgeois careers and values in his book "Bobos in Paradise" (2000). P.J. O'Rourke, a conservative humourist, perceptively skewered left-wing pieties in books like "Parliament of Whores" (1991). But today, it seems unlikely that Dinesh D'Souza spent much time in honest conversation with Democrats before writing "The Big Lie: Exposing the Nazi Roots of the American Left", one of the bestselling conservative political books of the past year.

Braver writers on the right have taken another approach: critically examining their own side. Two Republican senators have written books filled with alarm at the rise of Mr Trump. Ben Sasse, from Nebraska, never endorsed his party's nominee. In "The Vanishing American Adult" he talks about a country now in "perpetual adolescence", and stresses family, reading and community service in a culture he sees as giving way to selfishness, celebrity and screen-time. It is the rarest of things, a book by a politician being read by both tribes.

A more explicitly political book by a conservative on conservatism has not shared that success. Jeff Flake, an Arizonan senator, fears that his party has made a bad deal for power, by standing squarely with Mr Trump in exchange for giving up their firm support for free trade, limited government and American leadership of the democratic world. His "Conscience of a Conservative" was meant as a *cri de coeur* ➤

► to his fellow Republicans. Those who bought it on Amazon, though, were more likely to buy "How The Right Lost Its Mind" by Charles Sykes, "The Conscience of a Liberal" by Paul Krugman, or even Ms Tur's "Unbelievable" than any book by another prominent conservative writer.

Writers on the left have not shied away from "blue-on-blue" criticism of their own side. In "The Once and Future Liberal" Mark Lilla of Columbia University has criticised "a kind of moral panic about racial, gender and sexual identity that has distorted liberalism's message and prevented it from becoming a unifying force". Republicans, it might seem, should snap up a book arguing that the left has gone overboard in focusing on members of minority groups at the expense of "ordinary people" in middle America. But Mr Lilla's book is being read overwhelmingly by those who read other liberal books.

One of the most favourably reviewed books was also a surprise bestseller: J.D. Vance's "Hillbilly Elegy". Mr Vance's family, who "would rather shoot you than argue with you", left Appalachian Kentucky for a steel town in Ohio. They are the "white trash" that other books have focused on, too, aiming to work out how they abandoned the Democratic Party. But Mr Vance is an insider, not an anthropologist. Drugs, drink and violence plagued his family and his town, and Mr Vance, a political conservative, is critical of this culture. Highbrow Democrats and Republicans alike have admired his book, published in June 2016, but it is mostly bought by Democratic-leaning readers.

Perhaps the most mournful category of crossover book is the story of the hapless Clinton campaign. One book, "Shattered: Inside Hillary Clinton's Doomed Campaign", is an account of Ms Clinton's staff and messaging turmoil by two veteran journalists, Jonathan Allen and Amie Parnes. Politicos of all stripes seem to be interested in the story. Not so with "The Destruction of Hillary Clinton", by a feminist professor at the University of Kentucky, Susan Bordo. She argues that America was simply not ready for such a strong woman. Most of its reviewers on Amazon seemed to agree, giving it five stars. Nearly all of those who disagreed did so violently, giving it one star; perhaps they bought the book mistakenly believing that the "destruction" of Ms Clinton promised in the title would be narrated with glee.

Jeff Bezos, Amazon's founder, has bought the *Washington Post*, and urged upon it the motto: "Democracy Dies in Darkness". But Amazon conquered the book market in part on the strength of its "recommendation engine". That now contributes to the dark spots in Americans' knowledge of their political opposites. Whether Amazon will—or even can—do anything to change that is yet to be seen. ■

The Ukrainian famine

The making of a mass murder

Red Famine: Stalin's War on Ukraine. By Anne Applebaum. Doubleday; 496 pages; \$35. Allen Lane; £25

OF THE estimated 70m deaths due to famines in the 20th century, at least 40m occurred under communist regimes in China, the Soviet Union, North Korea and Cambodia. The precise number of deaths remains uncertain, as do the causes, owing to the difficulty of disentangling the effects of war, revolution and disease, as well as those regimes' isolation and secrecy. Even low estimates, however, are damning: what clearer illustration could there be of socialism's impracticality than its repeated failure to feed its own people?

In her powerful account of the famine in Soviet Ukraine in the early 1930s Anne Applebaum, a Pulitzer prize-winning writer (and a former journalist at *The Economist*), tells an even more sinister story. Far from an unintended result of ill-conceived policies, she argues, the roughly 4m deaths from hunger in 1932 and 1933 were part of a deliberate campaign by Josef Stalin and the Bolshevik leadership to crush Ukrainian national aspirations, literally starving actual or potential bearers of those aspirations into submission to the Soviet order. As her book's subtitle says, Stalin was waging "war on Ukraine", the Soviet Union's strategically and economically most valuable republic after Russia. War, as Carl von

Clausewitz famously put it, is the continuation of politics by other means. The politics in this case was the Sovietisation of Ukraine; the means was starvation. Food supply was not mismanaged by Utopian dreamers. It was weaponised.

As Ms Applebaum notes, this is not a new argument. Émigré survivors of the famine said as much in the 1950s. They were largely dismissed, however, as right-wing conspiracy-mongers driven by anti-communism and Ukrainian nationalist hatred of Russia. Thirty years later, though, a documentary film, "Harvest of Despair" (produced by members of Canada's Ukrainian community) and Robert Conquest's book "Harvest of Sorrow" began to change minds. For the first time, the word Holodomor (Ukrainian for "killing by hunger") began to reach large audiences.

With the disintegration of the Soviet Union in 1991, scholars gained access to an enormous trove of historical documents, not least in newly independent Ukraine. No evidentiary smoking gun has yet emerged demonstrating orders from the Kremlin to impose famine. What has come to light, and what Ms Applebaum synthesises in lucid and vigorous prose, is a devastating circumstantial case. "Red Famine" presents a Bolshevik government so hell-bent on extracting wealth and controlling labour that it was willing to confiscate the last remaining grain from hungry peasants (mostly but not exclusively in Ukraine) and then block them from fleeing famine-afflicted areas to search for food.

The book's most powerful passages describe the moral degradation that resulted from sustained hunger, as family solidarity and village traditions of hospitality withered in the face of the overwhelming desire to eat. Under a state of siege by Soviet authorities, hunger-crazed peasants took to consuming grass, animal hides, manure and occasionally each other. People became indifferent to the sight of corpses lying in streets, and eventually to their own demise. Stalin was not only aware of the ensuing mass death (amounting to roughly 13% of Ukraine's population). He actively sought to suppress knowledge of it (including banning the publication of census data), so as not to distract from the campaign to collectivise Soviet agriculture and extend the Communist Party's reach into the countryside—a campaign Ms Applebaum calls a "revolution...more profound and more shocking than the original Bolshevik revolution itself".

Known for her sharply critical previous books about Stalin's gulag and the Sovietisation of eastern Europe after the second world war, Ms Applebaum is not shy about suggesting parallels between Stalin's war and Vladimir Putin's campaign in Ukraine today. "Eighty years later," she writes, "it is possible to hear the echo of Stalin's fear of Ukraine—or rather his fear of unrest ►



A calamity made in Moscow

spreading from Ukraine to Russia—in the present too.” “Red Famine” claims that Ukraine’s current “pathologies”—including political passivity and tolerance of corruption—can be traced back to the famine. Those qualities, however, can be found in nearly every country that emerged from the Soviet collapse, including Russia. While stressing Stalin’s goal of crushing Ukrainian nationalism, moreover, Ms Applebaum passes over a subtler truth. For along with its efforts to root out “bourgeois” nationalisms, the Kremlin relentlessly promoted a Soviet version of Ukrainian identity, as it did with most other ethnic minorities. Eight decades on, that legacy has done even more to shape today’s Ukraine than the Holodomor.

Stalin’s assault on the Ukrainian peasantry marked the third in a series of attempts to modernise the inherited agrarian order, following the emancipation of the serfs in 1861 and prime minister Pyotr Stolypin’s attempt in 1912 to transform former serfs into yeoman farmers. With searing clarity, “Red Famine” demonstrates the horrific consequences of a campaign to eradicate “backwardness” when undertaken by a regime in a state of war with its own people. ■

A carpenter’s memoir

If I had a hammer

Making Things Right: A Master Carpenter at Work. By Ole Thorstensen. Translated by Sean Kinsella. MacLehose Press; 240 pages; £16.99

HANDS can reveal much about the lives of their owners. Ole Thorstensen’s fingers are surprisingly intact, and he has a few small but unremarkable scars. His skin is like a “work glove”, tough but smooth. At night the dirt in his pores will not budge. A debut author who has spent nearly 30 years as a carpenter, his hands are a “personal cv”, and his memoir, “Making Things Right”, is an ode to all that they have done.

Woven around the tale of a loft he converts in an Oslo suburb, the book melds the technical and the personal with lyrical minimalism. After a few too many the night before, a Captain Beefheart song becomes lodged in his head: “I went around all day with the Moon sticking in my eye.” Though able to construct a roof truss with precision, he has no sense of direction, navigating his way through the city by buildings he has improved in jobs past.

There is a soothing steadiness to be found in his explanations of his trade. “When you are not taught a more collaborative way of working then you do not



Hammer, chisel, heart and soul

know what you are missing,” he says. In the delicate and intuitive dance that takes place when several people lift a heavy ridge beam, they are “at the mercy of each other”, needing to keep in mind that “what is heavy is different for all of us.” And he says that openly claiming your mistakes as well as successes is critical to a good result.

At times the book veers dangerously close to the banality of an instruction manual (some passages will only bring true delight to the technically minded among his readers). But it also shows the philosophical side to a tradesman’s life. Finding old newspapers in the walls of buildings he is working on, Mr Thorstensen sees history itself embedded in a structure. He says he “cannot build something just to see if it works” because clients will not pay for it. So he must translate theory into a mental image of the completed work, as though a film of the drawings and specifications were running in his mind.

Of course the job is not without troubles. Winters spent working in sub-zero conditions aggravate his eczema, and he mends the cracks and cuts that won’t close on his hands with surgical tape—“plasters are no use.” Architects are “dismissive” of the people who turn their designs into buildings. And indecisive clients who have read too many design magazines all end up wanting bathrooms that look like “variations of tiled rooms in an abattoir”.

Managing competing demands means he must be a “psychologist, sociologist, anthropologist and historian”. In this last role, he notes, the “men who were builders more than a hundred years ago”, “friends almost”, dirtied their hands and solved problems in the same way he does. Hammering, sawing and sanding his way through each hour, he takes pride in a craft where function meets beauty in the spaces of everyday life. ■

German fiction

The wall in the mind

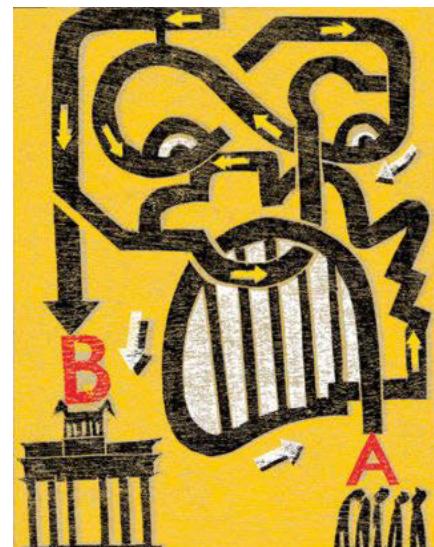
Go, Went, Gone. By Jenny Erpenbeck.

Translated by Susan Bernofsky. *New Directions*; 320 pages; \$16.95. Portobello Books; £14.99

A RETIRED classicist, Richard shuns strident rhetoric. This reserved and solitary man, the protagonist of Jenny Erpenbeck’s seventh novel, nonetheless comes to a severe judgment on the plight of African refugees in Berlin. “Only if they survived Germany now”, he reflects, “would Hitler truly have lost the war.”

Germany’s legacies of division and exclusion have shadowed debates on asylum policy during the country’s recent election campaign. So Susan Bernofsky’s finely crafted translation of “Go, Went, Gone” reaches Anglophone readers at an opportune moment. Raised in East Berlin, a stone’s throw from the Wall, Ms Erpenbeck has in her fiction told the stories of people stranded on the wrong side of history. Richard, who grew up in the despised German Democratic Republic, brings his own experience as a second-class German to bear on his welfare work for a large group of fugitives from Libya. Already in flight from starvation, persecution or “the mayhem of war” in several west African states, they toiled as migrant labourers under Qaddafi. When the tyrant fell, they say, “no one was on our side.” After this second expulsion, hundreds perished in traffickers’ overloaded boats. The survivors gather in Berlin squares, where the lonely scholar begins to champion their cause.

Ms Erpenbeck has herself worked as a volunteer with African migrants in Berlin. “Go, Went, Gone” incorporates documen-



tary elements—the step-by-step dispersal of the refugees, the bureaucratic nightmare as they risk drowning “in rivers and oceans of paper”—but transcends reportage. Pivotal episodes both of solidarity and misunderstanding explore every “invisible line” between people. Richard’s new friends—Rashid, Karon, Yussuf, Ithemba—carry a rich load of memory and grief; their lives have been “cut off...as if with a knife”. Yet the sudden collapse of the Soviet bloc has taught Richard “the ephemeral nature” of all frontiers. Through his eyes, and his conviction that there are “no two halves” to humankind, Ms Erpenbeck binds the upheavals of past and present, Europe and Africa. Lyrical and satirical by turns, she shows that fearful isolation, emotional or political, hurts wall-builders and wall-jumpers alike. As the Latin proverb cited by a jovial immigration lawyer goes: “Your own property is in peril when your neighbour’s house burns.” ■

Photography

Manipulation man

How Thomas Ruff disassembles and reassembles photography

WHEN Thomas Ruff was young, he had a simple ambition: to travel the globe taking colourful pictures of far-away places for *National Geographic*. Then he went to art school. His teachers at the Kunsthakademie in Düsseldorf, where he began studying in 1977, were Bernd and Hilla Becher, a couple whose austere photographs of industrial buildings, from water towers to blast furnaces, were among the most celebrated images in contemporary art. They encouraged Mr Ruff to think more deeply about the history and genres of photography, its technologies and techniques, its limits and possibilities, and how it relates to other art forms like painting and sculpture. The simple ambition evolved into a more complicated one: to produce pictures which, whatever else they were about, were about photography itself.

A new retrospective of Mr Ruff’s work since 1979, on display at the Whitechapel Gallery in London, adds up to an enthralling and unnerving exploration of the medium. Since Mr Ruff was a student, photography has been transformed by digital technology, the internet and social media. He has been alert to every shift and development. His work lays bare how photographs are manipulated, distributed and devoured in print and online, in the news, surveillance and pornography.

He began, in the usual manner, by taking photographs himself. One highlight of

the show is an early series of portraits of his fellow art-school students made in the 1980s. He positioned each subject against a plain white background under identical lighting, and asked them to look into his large-format camera with as neutral an expression as possible, taking the rigour and precision with which the Bechers had shot buildings and applying it to the human face. The results, which Mr Ruff printed over a metre tall, resemble passport or identity-card photos, upending the usual notions of the portrait. In his hands a genre traditionally used to illuminate personality shows conformity instead.

Then, in 1989, Mr Ruff obtained a cache of old negatives from the European Southern Observatory in the Atacama Desert. Fascinated by astronomy since he was a child, he began experimenting, cropping and enlarging them to create grand skyscapes of space dust and shining constellations. Hung opposite the portraits in the exhibition, these represent a turning point in his career. From then on he spent less time behind the camera and more time at the computer, buying prints in online auctions and scouring the internet for pictures which he would then tweak and rearrange to create new works.

Often these take advantage of the way digital images are made to achieve jarringly beautiful effects. In his series of “JPEGs”, he enlarged low-resolution photographs of disasters, of the kind that readers consume in their online news feeds every day. A blurred image of 9/11 or the aftermath of an explosion, as you move closer, becomes an abstract grid of pixels in finely graded tones as the image of destruction itself begins to disintegrate.

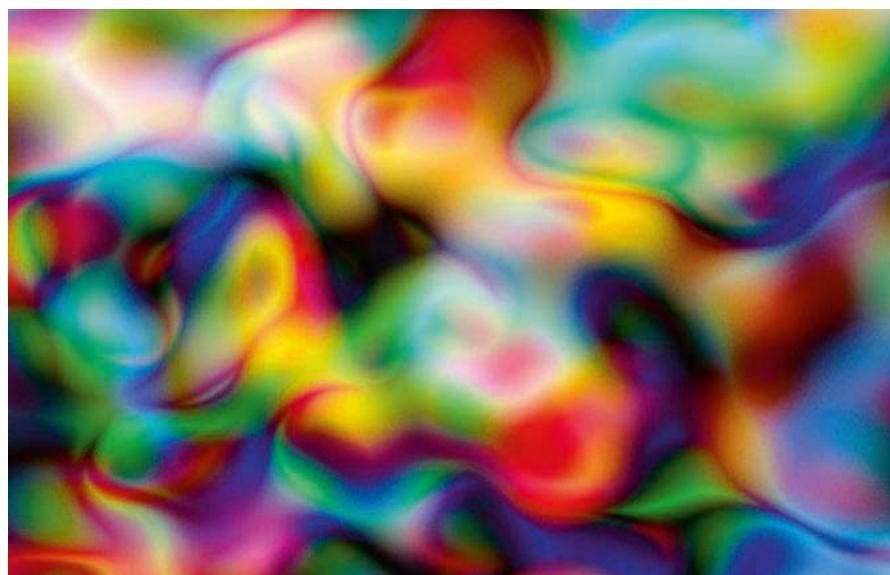
More painterly still are his “Nudes”. These are stills from pornographic websites—tongues entwined, a naked man seen from behind—enlarged and blurred

until they take on a dreamy softness. They are Mr Ruff’s contribution to an ancient genre, made in an age where the majority of nude images come in the form of online porn. In “Substrates” (pictured) he goes further, layering erotic manga cartoons over each other until the figures disappear, leaving just wild swirls of bright colour.

Mr Ruff has also been an early adopter of new technologies for creating his own photographs. During the first Gulf war in 1991, as footage was relayed on live television, Mr Ruff got night-vision equipment and turned it on suburban Düsseldorf, capturing quiet streets, parked cars and illuminated windows. The sinister green glow of these pictures, familiar these days from the cameras of military drones, draws on the power of a visual style to create a sense of threat, even where there is none.

Amid the exhibition’s technical wizardry, there is plenty of pure visual wonder. His “Photograms” are kaleidoscopes of shape and colour so glorious that the complexity of their composition quickly fades from the mind. The photogram was a technique favoured by surrealists like Man Ray, who made abstract compositions by simply placing objects on light-sensitive paper. In Mr Ruff’s version, he used a computer program normally used by architects to create entirely digital paper, objects and light sources. For one photogram, he made a digital tea-strainer.

The wittiest moments come in “Negatives”. Among Mr Ruff’s archive are 19th-century prints from India and from the studios of French artists. He has inverted the colours of the originals to create what look like old photographic negatives. To see the positive image, there is a simple trick: take out your phone, reverse the colours in the camera’s settings, and point it at the picture. As ever, Mr Ruff is looking at photography through the latest lens. ■



Manga-nificent

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Economic data

% change on year ago

	Gross domestic product	Industrial production	Consumer prices	Unemployment rate, %	Current-account balance		Budget balance	Interest rates, %	10-year gov't bonds, latest	Currency units, per \$			
					latest	qtr* 2017†	latest	2017†	latest 12 months, \$bn	% of GDP 2017†			
United States	+2.2 Q2	+3.0	+2.1	+1.5 Aug	+1.9 Aug	+1.9	4.4 Aug	-460.9 Q2	-2.4	-3.4	2.23	-	-
China	+6.9 Q2	+7.0	+6.8	+6.0 Aug	+1.8 Aug	+1.8	4.0 Q2 [§]	+157.3 Q2	+1.5	-3.9	3.62 ^{§§}	6.63	6.67
Japan	+1.4 Q2	+2.5	+1.6	+4.7 Jul	+0.5 Jul	+0.5	2.8 Jul	+189.8 Jul	+3.6	-4.5	0.02	112	100
Britain	+1.7 Q2	+1.2	+1.5	+0.4 Jul	+2.9 Aug	+2.7	4.3 Jun ^{††}	-99.8 Q1	-3.4	-3.6	1.36	0.75	0.77
Canada	+3.7 Q2	+4.5	+2.6	+10.0 Jun	+1.4 Aug	+1.7	6.2 Aug	-45.0 Q2	-2.6	-2.1	2.13	1.24	1.33
Euro area	+2.3 Q2	+2.6	+2.0	+3.2 Jul	+1.5 Aug	+1.5	9.1 Jul	+370.8 Jul	+3.2	-1.3	0.47	0.85	0.89
Austria	+2.6 Q2	+0.4	+2.2	+5.7 Jul	+2.1 Aug	+1.9	5.4 Jul	+6.4 Q1	+2.1	-1.2	0.58	0.85	0.89
Belgium	+1.5 Q2	+1.7	+1.7	+3.9 Jul	+1.9 Aug	+2.1	7.6 Mar	-4.2 Mar	+0.7	-2.1	0.78	0.85	0.89
France	+1.8 Q2	+2.2	+1.6	+3.7 Jul	+0.9 Aug	+1.2	9.8 Jul	-31.0 Jul	-1.2	-3.1	0.71	0.85	0.89
Germany	+2.1 Q2	+2.5	+2.1	+4.0 Jul	+1.8 Aug	+1.6	3.7 Jul [†]	+274.1 Jul	+8.0	+0.7	0.47	0.85	0.89
Greece	+0.7 Q2	+2.2	+1.0	+1.7 Jul	+0.9 Aug	+1.3	21.2 Jun	-0.7 Jul	-1.3	-1.4	5.77	0.85	0.89
Italy	+1.5 Q2	+1.5	+1.3	+4.4 Jul	+1.2 Aug	+1.3	11.3 Jul	+51.0 Jul	+2.4	-2.3	2.21	0.85	0.89
Netherlands	+3.3 Q2	+6.3	+2.6	+3.0 Jul	+1.4 Aug	+1.2	5.9 Aug	+76.0 Q2	+9.9	+0.6	0.54	0.85	0.89
Spain	+3.1 Q2	+3.5	+3.1	+2.0 Jul	+1.6 Aug	+1.9	17.1 Jul	+23.1 Jun	+1.5	-3.3	1.60	0.85	0.89
Czech Republic	+3.4 Q2	+10.3	+4.5	+3.2 Jul	+2.5 Aug	+2.4	2.9 Jul [†]	+1.7 Q2	+0.9	-0.1	1.23	22.1	24.1
Denmark	+1.9 Q2	+2.5	+2.0	-2.4 Jul	+1.5 Aug	+0.9	4.5 Jul	+26.0 Jul	+8.2	-0.6	0.56	6.32	6.65
Norway	+0.2 Q2	+4.7	+1.9	-1.6 Jul	+1.3 Aug	+2.0	4.2 Jul ^{‡‡}	+16.6 Q2	+5.4	+4.2	1.60	7.91	8.16
Poland	+4.6 Q2	+4.5	+3.7	+8.7 Aug	+1.8 Aug	+1.8	7.0 Aug [§]	-3.0 Jul	-0.4	-2.2	3.36	3.65	3.82
Russia	+2.5 Q2	na	+1.7	+1.5 Aug	+3.3 Aug	+4.2	4.9 Aug [§]	+33.6 Q2	+2.7	-2.1	8.13	57.8	64.0
Sweden	+3.0 Q2	+5.2	+3.1	+5.3 Jul	+2.1 Aug	+1.7	6.0 Aug [§]	+22.5 Q2	+4.5	+0.9	0.66	8.15	8.63
Switzerland	+0.3 Q2	+1.1	+1.3	+2.9 Q2	+0.5 Aug	+0.5	3.2 Aug	+68.9 Q2	+9.6	+0.7	nil	0.97	0.97
Turkey	+5.1 Q2	na	+4.0	+25.6 Jul	+10.7 Aug	+10.3	10.2 Jun [§]	-37.1 Jul	-4.4	-2.0	11.06	3.55	2.98
Australia	+1.8 Q2	+3.3	+2.3	+0.8 Q2	+1.9 Q2	+2.1	5.6 Aug	-21.8 Q2	-1.4	-1.8	2.79	1.27	1.31
Hong Kong	+3.8 Q2	+4.1	+3.1	+0.4 Q2	+1.9 Aug	+1.6	3.1 Aug ^{††}	+15.0 Q2	+4.1	+1.0	1.65	7.81	7.75
India	+5.7 Q2	+4.1	+7.0	+1.2 Jul	+3.4 Aug	+3.6	5.0 2015	-29.2 Q2	-1.2	-3.2	6.67	65.4	66.5
Indonesia	+5.0 Q2	na	+5.2	+1.4 Jul	+3.8 Aug	+4.2	5.3 Q3 [§]	-14.2 Q2	-1.7	-2.4	6.64	13,374	12,955
Malaysia	+5.8 Q2	na	+5.4	+6.0 Jul	+3.7 Aug	+3.9	3.5 Jul [§]	+8.1 Q2	+2.3	-3.0	3.89	4.21	4.12
Pakistan	+5.7 2017**	na	+5.7	+13.0 Jul	+3.4 Aug	+3.9	5.9 2015	-12.1 Q2	-4.5	-5.9	8.20 ^{†††}	105	105
Philippines	+6.5 Q2	+7.0	+6.6	-1.1 Jul	+3.1 Aug	+3.0	5.6 Q3 [§]	-0.8 Jun	+0.1	-2.7	4.60	50.9	48.2
Singapore	+2.9 Q2	+2.2	+2.9	+19.1 Aug	+0.4 Aug	+0.7	2.2 Q2	+59.0 Q2	+19.7	-1.0	2.18	1.36	1.36
South Korea	+2.7 Q2	+2.4	+2.9	+0.1 Jul	+2.1 Sep	+1.9	3.6 Aug [§]	+82.1 Jul	+5.6	+0.9	2.36	1,137	1,097
Taiwan	+2.1 Q2	+0.5	+2.3	+3.2 Aug	+1.0 Aug	+0.5	3.8 Aug	+70.7 Q2	+12.7	+0.2	1.02	30.2	31.4
Thailand	+3.7 Q2	+5.4	+3.5	+3.7 Jul	+0.3 Aug	+0.7	1.2 Jul [§]	+44.9 Q2	+11.4	-2.5	2.19	33.2	34.6
Argentina	+2.7 Q2	+2.8	+2.6	-2.5 Oct	+23.1 Aug [†]	+24.6	8.7 Q2 [§]	-19.7 Q2	-3.3	-6.2	5.45	17.6	15.3
Brazil	+0.3 Q2	+1.0	+0.6	+2.5 Jul	+2.5 Aug	+3.7	12.8 Jul [§]	-13.5 Aug	-0.8	-8.1	8.72	3.17	3.24
Chile	+0.9 Q2	+3.0	+1.2	+3.3 Jul	+1.9 Aug	+2.4	6.9 Jul ^{§‡‡}	-5.6 Q2	-1.9	-3.0	4.30	634	663
Colombia	+1.3 Q2	+3.0	+1.7	+6.2 Jul	+3.9 Aug	+4.0	9.7 Jul [§]	-12.4 Q2	-3.7	-3.3	6.62	2,931	2,941
Mexico	+1.8 Q2	+2.3	+2.1	-1.6 Jul	+6.7 Aug	+5.8	3.3 Aug	-17.6 Q2	-1.9	-1.9	6.81	18.0	19.6
Venezuela	-8.8 Q4~	-6.2	-9.3	+0.8 Sep	na	+720	7.3 Apr [§]	-17.8 Q3~	-1.2	-19.5	8.38	9.99	9.99
Egypt	+4.9 Q2	na	+3.8	+33.0 Jun	+31.9 Aug	+26.9	12.0 Q2 [§]	-15.6 Q2	-6.0	-10.8	na	17.7	8.88
Israel	+3.9 Q2	+2.4	+3.5	+2.6 Jul	-0.1 Aug	+0.4	4.1 Aug	+10.7 Q2	+4.1	-2.6	1.76	3.53	3.75
Saudi Arabia	+1.7 2016	na	-0.5	na	-0.1 Aug	+1.1	5.6 2016	-1.0 Q1	+0.5	-7.5	3.68	3.75	3.75
South Africa	+1.1 Q2	+2.5	+0.6	-0.5 Jul	+4.8 Aug	+5.3	27.7 Q2 [§]	-7.9 Q2	-3.2	-3.2	8.65	13.4	13.5

Source: Haver Analytics. *% change on previous quarter, annual rate. [†]The Economist poll or Economist Intelligence Unit estimate/forecast. [§]Not seasonally adjusted. [‡]New series. ~2014 **Year ending June. ^{††}Latest 3 months. ^{†††}3-month moving average. ^{§§}5-year yield. ^{TE3335}Dollar-denominated bonds.

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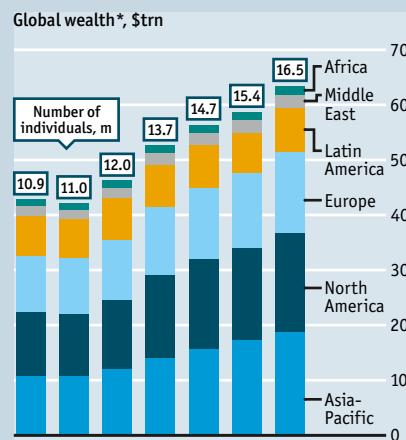
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Markets

	% change on			
	Index Sep 27th	one week	Dec 30th 2016 in local currency terms	
United States (DJIA)	22,340.7	-0.3	+13.0	+13.0
China (SSEA)	3,503.0	-0.6	+7.8	+12.9
Japan (Nikkei 225)	20,267.1	-0.2	+6.0	+9.8
Britain (FTSE 100)	7,313.5	+0.6	+2.4	+10.9
Canada (S&P TSX)	15,609.7	+1.4	+2.1	+10.7
Euro area (FTSE Euro 100)	1,216.2	+0.7	+9.4	+21.6
Euro area (EURO STOXX 50)	3,555.2	+0.8	+8.0	+20.2
Austria (ATX)	3,291.7	+0.1	+25.7	+39.8
Belgium (Bel 20)	3,986.8	+0.5	+10.5	+23.0
France (CAC 40)	5,282.0	+0.8	+8.6	+20.8
Germany (DAX)*	12,657.4	+0.7	+10.2	+22.6
Greece (Athex Comp)	736.6	-2.8	+14.4	+27.3
Italy (FTSE MIB)	22,622.2	+1.2	+17.6	+30.8
Netherlands (AEX)	531.1	+0.5	+9.9	+22.3
Spain (Madrid SE)	1,046.9	+0.9	+10.9	+23.4
Czech Republic (PX)	1,043.7	-0.3	+13.2	+30.8
Denmark (OMXCB)	926.2	+0.5	+16.0	+28.9
Hungary (BUX)	37,244.3	-2.3	+16.4	+28.6
Norway (OSEAX)	857.0	+1.8	+12.1	+21.2
Poland (WIG)	63,573.5	-1.8	+22.8	+39.4
Russia (RTS, \$ terms)	1,126.9	+0.4	-2.2	-2.2
Sweden (OMX30)	1,623.8	+2.4	+7.0	+19.1
Switzerland (SMI)	9,098.6	nil	+10.7	+15.4
Turkey (BIST)	101,218.3	-3.9	+29.5	+27.6
Australia (All Ord.)	5,725.5	-0.8	+0.1	+8.9
Hong Kong (Hang Seng)	27,642.4	-1.7	+25.6	+24.7
India (BSE)	31,159.8	-3.8	+17.0	+20.9
Indonesia (JSX)	5,863.0	-0.7	+10.7	+11.0
Malaysia (KLCSE)	1,764.2	-0.5	+7.5	+14.2
Pakistan (KSE)	42,290.2	-2.4	-11.5	-12.4
Singapore (STI)	3,236.2	+0.6	+12.3	+19.4
South Korea (KOSPI)	2,372.6	-1.6	+17.1	+24.0
Taiwan (TWI)	10,326.7	-1.8	+11.6	+18.8
Thailand (SET)	1,670.3	nil	+8.3	+16.4
Argentina (MERV)	25,271.2	+3.8	+49.4	+34.4
Brazil (BVSP)	73,796.7	-2.9	+22.5	+25.1
Chile (IGPA)	26,476.3	+1.3	+27.7	+34.2
Colombia (IGBC)	11,093.7	+0.1	+9.8	+12.0
Mexico (IPC)	50,169.1	-0.4	+9.9	+25.1
Venezuela (IBC)	463,847.1	+8.9	1,363	na
Egypt (EGX 30)	13,740.8	+0.3	+11.3	+14.3
Israel (TA-125)	1,291.2	-0.3	+1.1	+9.9
Saudi Arabia (Tadawul)	7,233.3	-1.2	-0.1	nil
South Africa (JSE AS)	55,214.1	-1.2	+9.0	+9.9

High-net-worth individuals

The global number of high-net-worth individuals (HNWIs) grew by 7.5% to 16.5m last year, according to the 2017 World Wealth Report by Capgemini, a consulting firm. HNWIs have at least \$1m in investable assets, excluding their main home, its contents and collectable items. Total HNWI wealth came to \$63.5trn last year, with the highest proportion concentrated in the Asia-Pacific region. The expansion of wealth in the Asian-Pacific slowed to 8.2% year-on-year though, partly owing to declines in the performance of stockmarkets in China and Japan. For global HNWI wealth to reach over \$100trn by 2025, Asian wealth (the biggest source of new futures) will need to increase by about 9.4% a year.



Source: Capgemini *Individuals with at least \$1m of investable assets

Other markets

	% change on			
	Index Sep 27th	one week	Dec 30th 2016 in local currency terms	
United States (S&P 500)	2,507.0	nil	+12.0	+12.0
United States (NAScomp)	6,453.3	nil	+19.9	+19.9
China (SSEB, \$ terms)	359.0	nil	+5.0	+5.0
Japan (Topix)	1,664.4	-0.2	+9.6	+13.5
Europe (FTSEurofirst 300)	1,515.6	+1.1	+6.1	+18.0
World, dev'd (MSCI)	1,988.0	-0.5	+13.5	+13.5
Emerging markets (MSCI)	1,078.6	-3.0	+25.1	+25.1
World, all (MSCI)	484.0	-0.8	+14.7	+14.7
World bonds (Citigroup)	937.6	-1.3	+6.1	+6.1
EMBI+ (JP Morgan)	835.7	-0.4	+8.2	+8.2
Hedge funds (HFRX)	1,253.8 [§]	-0.1	+4.2	+4.2
Volatility, US (VIX)	9.9	+9.8	+14.0 (levels)	
CDSs, Eur (iTRAXX) [†]	57.5	+1.0	-20.4	-11.4
CDSs, N Am (CDX) [†]	58.9	+6.7	-13.1	-13.1
Carbon trading (EU ETS) €	6.9	+5.5	+5.2	+17.0

Sources: IHS Markit; Thomson Reuters. *Total return index.

†Credit-default-swap spreads, basis points. [§]Sep 26th.

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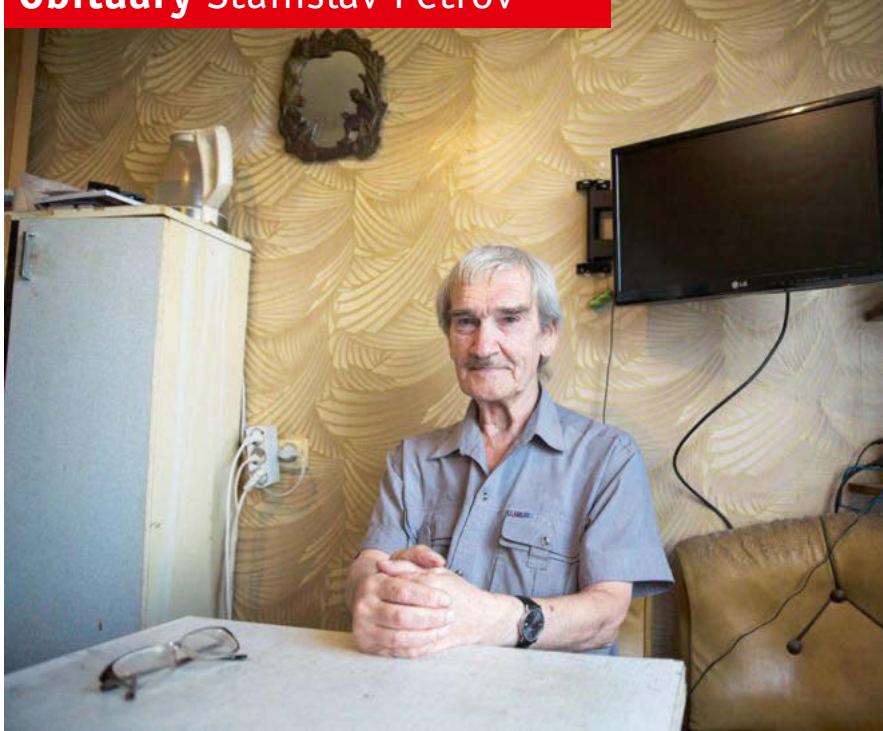


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Midnight and counting

Stanislav Petrov, "the man who saved the world", was reported on September 18th to have died on May 19th, aged 77

OVER the years, Stanislav Petrov got used to those telephone calls. Typically they would come at night or at the weekend, just as he was unwinding. He would lift the receiver to hear the jaunty strains of "Arise, our mighty country!" in his ear, and know that he had to get dressed, now, and get to the base. It was a pain. But in the nervy 1970s and 1980s, when an American attack on the Soviet Union might happen at any time, an alert might be a practice, or might be the real thing. Either way, the motherland had to be defended.

"The base" was the secret Serpukhov-15 early-warning facility, near Moscow. He had worked there—since graduation, with top honours, from the Radio-Technical College in Kiev—monitoring surveillance by Oko satellites of the missile launch areas of the United States. Its core was a room of 200 computer operators over which, when he was on duty, he would preside from a glassed-in mezzanine office. On one wall of the computer room, an electronic world map lit up the American launch areas: six of them, with a total of 1,000 missiles aimed at the USSR. Just above his eye level, a wall's-width screen glowed a dull red. If nothing appeared on it, all was well.

He worked regular command shifts as well as the alerts, twice a month, just to keep in training. Even his wife Raisa didn't

know what his work was. And, though this was combat duty, not much was doing: by 10pm, after supper and a smoke, they would await the late-night orbit, all quiet.

September 26th 1983 was different. At half past midnight, the red screen flashed "START". A missile was coming. The siren howled. In the room below, people leapt from their seats. Everyone looked up at him. He had frozen. The message seemed odd: one missile would not mean the all-out attack they were expecting. But how did he know? Scared stiff, he roared at everyone to get back to work. When he managed to pick up the phone, he reported a fault in the system. But then it saw a second missile. A third, a fourth, a fifth: "probability of attack, 100%". In ten minutes, ground radar could confirm it. But in 12 minutes the missiles, if they were coming, would hit Russia. High command needed 12 minutes to organise their response.

His hands shaking, he called his superiors again. Again he reported a malfunction, not a strike. The officer at the other end was drunk, but somehow passed it on. Mr Petrov then waited for 15 unbearable minutes. And nothing happened. There was indeed a fault in the system: the satellite had been fooled by the sun's rays reflecting off clouds high over North Dakota, which had two launch areas. Every time he

remembered that moment when his call proved right, his lean face would break into a smile of sheer relief.

His coolness had saved the world from nuclear apocalypse. Or so other people said. He knew that, at the time, he had not been cool. His chair had felt red-hot as a frying pan, his legs limp as cotton. Some of his doubts were logical: the newness of the system, and the too-swift passage of the message through the 30 layers of verification he had set up himself. Other doubts were vaguer: a funny gut feeling, and a sense that he knew better than a machine. Even so, his decision to declare a false alarm was a 50-50 guess, no better. Small wonder that, when it was over, he felt as wrung-out as Jesus on Golgotha.

The fact that he was basically a scientist, with a civilian training, also influenced him. Much as he had longed to be a fighter pilot like his father, a career soldier would probably have passed on the message without thinking. There were safeguards against going to war, or not, on the say-so of one man; other authorities had to be involved. But in such febrile times, one rooster crowing was likely to set off all the others in the village.

As for those military cockerels, they were horribly embarrassed by what he had done. So were all those renowned academicians who had spent billions devising the surveillance system. They did not thank him for showing them up, for it was an old rule in Russia that the subordinate must never be cleverer than the boss. Instead, they rapped him for failing to fill in the operations log that night. Come on, he thought. A few months later he left the army anyway to take a job as a research engineer and to care for Raisa, who had cancer. And so things went for several years. When she died, and money got tight, he mostly lived on potatoes and tea brewed from herbs he picked in the park.

Tea and potatoes

His story stayed secret until 1998. When it came out, he was feted in the West. He toured America, starred in a documentary, was commended at the UN and received the Dresden peace prize. Sometimes he enjoyed the fuss, but bitterness over his treatment at home would surface all the same. He was often tetchy with reporters who made their way to his small, grubby flat on 60th Anniversary of the USSR Street, in Fryazino north-east of Moscow, and sat in his bare kitchen with the star-chart on the wall. He had done nothing, he would tell them, except his duty and his job. And all he had to show for that was the TV his colleagues at Serpukhov-15 had given him when he left, and the telephone that had been installed, free, by the army when he drew his pension. It had been cut off for non-payment, and never rang now. ■

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